PHILIPS

VARI✶LITE

VL4000 Spot Luminaire
User's Manual

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Version as of: **18 August 2014**

Part number: **02.9704.0001 A**

How To Obtain Warranty Service

A copy of the Vari-Lite Limited Warranty was included in the shipping package for this VARI✳LITE product.

To obtain warranty service, please contact customer service at 1-877-VARI-LITE (1-877-827-4548), +1-214-647-7880, or entertainment.service@philips.com and request a Return Material Authorization (RMA) for warranty service. You will need to provide the model and serial number of the item being returned, a description of the problem or failure and the name of the registered user or organization. If available, you should have your sales invoice to establish the date of sale as the beginning of the warranty period.

Once you obtain the RMA, pack the unit in a secure shipping container or in its original packing box. Go to the Vari-Lite web site www.vari-lite.com, click on the Support link, and download the RMA form. Put the completed RMA form in shipping container along with a copy of your invoice (if available). Write the RMA number legibly on or near the shipping address label and return the unit, freight prepaid to:

Vari-Lite
Attention: Warranty Service (RMA#_____)
10911 Petal Street
Dallas, Texas 75238 USA

As stated in the warranty, it is required that the shipment be insured and FOB our service center.

Compliance Notice

FCC This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with Vari-Lite system, service, and safety guidelines, may cause harmful interference to radio communications.

As tested under this standard:

FCC 47CFR 15B cIA*CEI

Issued:2009/10/01 Title 47 CFR Part 15 Subpart B Unintentional Radiators Class A

Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.

CE **EC Declaration of Conformity**

We, Philips Lighting B.V., 10911 Petal Street, Dallas, Texas 75238, declare under our responsibility for the products contained herein are in conformity with the essential requirements of the following European Directives and harmonized standards:

Low Voltage Director (LVD), 2006/95/EC

EN 60589-2-17:1984+A1:1987+A2:1990 used in conjunction with 60598-1:2008/A11:2009

Electromagnetic Compatibility Directive (EMC), 2004//108/EC

EN 55022:2010, EN55024:2010

Safety Notice

It is extremely important to read ALL safety information and instructions provided in this manual and any accompanying documentation before installing and operating the products described herein. Heed all cautions and warnings during installation and use of this product.

Safety symbols used throughout this manual are as follows:

 CAUTION advising of potential damage to product.

 WARNING advising of potential injury or death to persons.

GENERAL INFORMATION PERTAINING TO PROTECTION AGAINST ELECTRICAL SHOCK, FIRE, EXPOSURE TO EXCESSIVE UV RADIATION, AND INJURY TO PERSONS CAN BE FOUND BELOW.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST FIRE

1. VARI✳LITE luminaires have been designed for use with specific lamp types. The VL4000 spot luminaire requires a certain type of lamp (see "Replacement Items/Accessories" on page 8 for all lamp types). Installing another type or unapproved lamp may be hazardous.

2. Luminaires may be mounted on any type of surface as long as mounting instructions are followed. See instructions detailed in this manual.

3. Note distance requirement from combustible materials or illuminated objects for VARI✳LITE luminaires.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK

1. VARI✳LITE luminaires are designed for dry locations only. Exposure to rain or moisture may damage luminaire.

2. Disconnect power before servicing any VARI✳LITE equipment.

3. Servicing to be performed by qualified personnel only.

WARNING:
INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST EXCESSIVE EXPOSURE TO UV RADIATION

1. Many VARI✻LITE luminaires use a lamp that produces UV radiation. DO NOT look directly at lamp.
2. It is hazardous to operate luminaires without lens or shield. Shields, lenses, or ultraviolet screens shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired. For example, by cracks or deep scratches.

WARNING:
INSTRUCTIONS FOR PROTECTION AGAINST INJURY TO PERSONS

1. Exterior surfaces of the luminaire will be hot during operation. Use appropriate safety equipment (gloves, eye protection, etc.) when handling and adjusting hot equipment and components.
2. Luminaires will have a hot lamp when operating. Disconnect power and allow lamp to cool before replacing.
3. Arc lamps emit ultraviolet radiation which can cause serious skin burn and eye inflammation. Additionally, arc lamps operate under high pressure at very high temperatures. Should the lamp break, there can exist a danger of personal injury and/or fire from broken lamp particles being discharged.
4. Wear eye protection when relamping.
5. Appropriate safety equipment (gloves, eye protection) should be used when handling damaged lamps.
6. If lamp is touched with bare hands, clean lamp with denatured alcohol and wipe with lint-free cloth before installing or powering up the luminaire.
7. The lamp shall be changed if it has become damaged or thermally deformed.

WARNING:
RF INTERFERENCE

1. This is a Class A product. In a domestic environment this product may cause radio interference, in which case, the user may be required to take adequate measures.

Sicherheitshinweise

Es ist äußerst wichtig, ALLE Sicherheitsinformationen und -hinweise in diesem Handbuch und dem beiliegenden Informationsmaterial zu lesen, bevor Sie die hierin beschriebenen Produkte installieren bzw. bedienen. Halten Sie bei der Installation und dem Einsatz dieses Produkts alle Warnhinweise und Vorsichtsmaßnahmen ein.

Folgende Sicherheitssymbole werden in diesem Handbuch verwendet:

VORSICHT - weist auf möglichen Produktschaden hin.

WARNUNG - weist auf mögliche Körperverletzung und Lebensbedrohung hin.

NACHSTEHEND FINDEN SIE ALLGEMEINE HINWEISE ÜBER SICHERHEITSVORKEHRUNGEN GEGEN ELEKTROSCHOCK, FEUER, ÜBERHÖHTE UV-STRAHLUNG UND KÖRPERVERLETZUNGEN.

WARNUNG:
HINWEISE ZUM FEUERSCHUTZ

1. VARI✳LITE-Scheinwerfer sind ausschließlich für den Einsatz mit bestimmten Lampentyps. Achten Sie auf den Lampentyp, bevor Sie die jeweiligen Lampen ersetzen. Die Installation eines anderen Lampentyps kann gefährlich sein.

2. Scheinwerfer können auf jeder beliebigen Oberfläche montiert werden, solange Sie die Montageanweisungen befolgen. Detaillierte Hinweise finden Sie in diesem Handbuch.

3. Beachten Sie die Einhaltung des erforderlichen Sicherheitsabstandes der VARI✳LITE-Scheinwerfer von brennbarem Material oder beleuchteten Objekten.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN ELEKTROSCHOCK

1. VARI✳LITE-Scheinwerfer eignen sich ausschließlich für trockene Standorte. Regen oder Feuchtigkeit können die Scheinwerfer beschädigen.

2. Unterbrechen Sie die Stromzufuhr, bevor Sie mit der Arbeit an VARI✳LITE-Geräten beginnen.

3. Die Geräte sollten nur von qualifiziertem Personal gewartet werden.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN ÜBERHÖHTE UV-STRAHLUNG

1. Viele VARI✽LITE-Scheinwerfer verwenden die Lampentyp, der UV-Strahlen abgibt. SCHAUEN SIE NICHT direkt in die Lampe.

2. Es ist gefährlich, Leuchten ohne Linsen oder Blenden zu bedienen. Blenden, Linsen oder Ultraviolettschirme müssen ausgetauscht werden, sofern deren Schutzwirkung durch sichtbare Beschädigung (z. B. Sprünge oder Schrammen) eingeschränkt ist.

WARNUNG:
HINWEISE ZUM SCHUTZ GEGEN KÖRPERVERLETZUNGEN

1. Bei Betrieb sind die Außenflächen der Scheinwerfer heiß. Verwenden Sie bei der Bedienung von aufgeheizter Apparatur die jeweils geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz etc.).

2. Bei Betrieb der Scheinwerfer ist die Lampe heiß. Unterbrechen Sie die Stromzufuhr und lassen Sie die Lampe abkühlen, wenn Sie diese austauschen.

3. Bogenlampen senden ultraviolette Strahlen aus, die Hautverbrennungen und Augenentzündungen verursachen können. Der Betrieb von Bogenlampen erfolgt unter Hochdruck und bei hohen Temperaturen. Sollte die Lampe zerbrechen, besteht die Gefahr von Körperverletzung bzw. von Feuer, das von Lampenteilen ausgelöst werden kann.

4. Tragen Sie beim Austausch der Lampen einen Augenschutz.

5. Die geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz) sollte beim Umgang mit beschädigten Lampen verwendet werden.

6. Wenn die Lampe mit bloßen Händen berührt wird, reinigen Sie sie mit denaturiertem Alkohol und einem flusenfreien Tuch, bevor Sie die Scheinwerfer installieren oder in Betrieb nehmen.

7. Wenn die Lampe beschädigt oder durch Hitzeeinwirkung deformiert ist, muß diese ausgetauscht werden.

WARNUNG:
HF-INTERFERENZ

1. Es handelt sich um ein Produkt der Klasse A. In einer Wohnumgebung kann das Produkt Hochfrequenzstörungen verursachen. In diesem Fall müssen eventuell geeignete Maßnahmen getroffen werden.

Notes de sécurité

Avant de procéder à l'installation des produits décrits dans ce guide et de les mettre en marche, il est extrêmement important de lire TOUS les renseignements et TOUTES les directives de sécurité contenues dans ce guide ainsi que toute documentation jointe. Tenir compte de tous les avertissements et suivre toutes les précautions pendant l'installation et l'utilisation de cet appareil.

Les symboles de sécurité utilisés dans ce guide sont les suivants :

ATTENTION Ce symbole annonce que l'appareil risque d'être endommagé.

AVERTISSEMENT Ce symbole annonce qu'il y a risque d'accident grave ou même fatal.

CETTE SECTION CONTIENT DES INFORMATIONS GÉNÉRALES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES , LES INCENDIES, L'EXPOSITION EXCESSIVE AUX RAYONS UV ET TOUT AUTRE ACCIDENT POUVANT ENTRAÎNER DES BLESSURES.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES INCENDIES

1. Les luminaires VARI✶LITE ont été conçus pour être utilisés uniquement avec certaines type de lampes. Vérifier le type de lampe avant de remplacer les lampes. L'installation d'un autre type de lampe peut poser un danger.
2. Les luminaires peuvent être fixés sur tout type de surface tant que les directives de montage sont respectées. Voir les explications détaillées dans ce guide.
3. Vérifier la distance à respecter entre les matériaux combustibles ou les objets illuminés et les luminaires VARI✶LITE.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES

1. Les luminaires VARI✶LITE sont conçus pour une utilisation au sec uniquement. Une exposition à la pluie et à l'humidité risque d'endommager le luminaire.
2. Débrancher l'appareil avant de procéder à la révision de tout matériel VARI✶LITE.
3. Les révisions doivent être effectuées uniquement par des personnes qualifiées.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE UNE EXPOSITION EXCESSIVE AUX RAYONS UV

1. Plusieurs luminaires VARI✳LITE utilisent une lampe qui produit des rayons UV. NE PAS fixer son regard sur la lampe.
2. L'utilisation des luminaires sans lentille ou blindage pose des risques. Tous blindages, lentilles ou écrans ultraviolet visiblement endommagés au point que leur efficacité en est affectée doivent être remplacés, par exemple s'il y a des fissures ou de profondes rayures.

AVERTISSEMENT:
DIRECTIVES POUR SE PROTÉGER CONTRE LES ACCIDENTS POUVANT ENTRAÎNER DES BLESSURES

1. Les surfaces externes du luminaire deviennent brûlantes quand l'appareil est en marche. Pour manœuvrer ou ajuster des appareils brûlants et leurs composants, se protéger suffisamment (gants, protection pour les yeux, etc.).
2. La lampe du luminaire est brûlante lorsqu'il est en marche. Débrancher le courant et attendre que la lampe ait refroidi avant de la remplacer.
3. Les lampes à arc émettent des rayons ultraviolets pouvant causer de graves brûlures sur la peau et une inflammation des yeux. De plus, les lampes à arc fonctionnent sous haute tension à de très hautes températures. Si la lampe se casse, les particules de la lampe cassée peuvent causer blessures et/ou incendie en s'éparpillant.
4. Se protéger les yeux pour remplacer la lampe.
5. Utiliser des appareils de protection appropriés (gants, protection des yeux) pour manier des lampes endommagées.
6. Si la lampe a été touchée avec des mains nues, la nettoyer avec de l'alcool dénaturé et l'essuyer avec un chiffon non-pelucheux avant d'installer ou de brancher le luminaire.
7. Si la lampe a été endommagée ou a reçu une déformation thermique, elle doit être remplacée.

AVERTISSEMENT:
INTERFÉRENCE RF

1. Cet appareil est de Classe A. Dans un environnement domestique, cet appareil peut causer des interférences radio, et si c'est le cas, l'utilisateur peut avoir à prendre des mesures adéquates.

Aviso sobre Seguridad

Es muy importante leer TODA la información e instrucciones sobre seguridad que se indica en este manual así como en los documentos adjuntos antes de instalar y operar los productos descritos. Se debe prestar atención a todos los avisos y advertencias durante la instalación y uso de este producto.

Los símbolos de seguridad usados en este manual son los siguientes:

CUIDADO, indica posibles daños al producto.

ADVERTENCIA, indica posibles lesiones o muerte a las personas.

LA INFORMACIÓN GENERAL RELACIONADA A LA PROTECCIÓN CONTRAGOLPES DE CORRIENTE ELÉCTRICA, INCENDIO, EXPOSICIÓN EXCESIVA A RADIACIÓN ULTRA VIOLETA Y LESIONES A LAS PERSONAS SE PUEDE ENCONTRAR SEGUIDAMENTE:

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA INCENDIO

1. Las luminarias VARI✳LITE han sido diseñadas para ser usadas solamente con algunas lámparas. Tome nota del tipo de lámpara antes de reemplazarla. Instalación de otro tipo de lámpara puede ser peligroso.
2. Las luminarias se pueden instalar en cualquier tipo de superficie siempre que se sigan las instrucciones de instalación. Vea las instrucciones detalladas en este manual.
3. Tome nota de los requerimientos de distancia de materiales combustibles u objetos iluminados para las luminarias VARI✳LITE.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA CHOQUE ELÉCTRICO

1. Las luminarias VARI✳LITE están diseñadas solamente para lugares secos. La exposición a la lluvia o humedad pueden dañar la luminaria.
2. Desconecte la energía antes de dar servicio a cualquier equipo de VARI✳LITE.
3. El servicio debe ser realizado solamente por personal calificado.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA LA EXPOSICIÓN EXCESIVA DE RADIACIÓN ULTRA VIOLETA

1. Muchas luminarias VARI✳LITE usan un tipo de lámpara que produce radiación UV. NO mire directamente a la lámpara.

2. Es peligroso operar luminarias sin lentes o protectores. Debe cambiar los protectores, lentes o pantallas ultravioletas si se aprecia que han sido dañadas, y que su efectividad pudiera estar deteriorada. Por ejemplo, si tuvieran rajaduras o raspaduras profundas.

ADVERTENCIA:
INSTRUCCIONES PARA PROTECCIÓN CONTRA LESIONES DE PERSONAS

1. Las superficies exteriores de las luminarias están calientes durante su operación. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando haga ajustes en el equipo y componentes que están calientes.

2. Cuando las luminarias están en operación la lámpara estará muy caliente. Desconecte la energía y deje que la lámpara se enfríe antes de reemplazarla.

3. Las lámparas de arco emiten radiaciones ultravioletas que pueden ocasionar serias quemaduras a la piel e inflamación a los ojos. Además, las lámparas de arco operan a alta presión y muy alta temperatura. Si la lámpara se rompe, puede existir el peligro de lesiones al personal o un incendio ocasionado por las partículas de la lámpara rota que se caen.

4. Use protección para los ojos cuando vuelve a colocar una lámpara nueva.

5. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando trabaje con lámparas dañadas.

6. Si toca la lámpara con las manos, limpie la lámpara con alcohol desnaturalizado y con tela sin pelusas antes de instalar o volver a conectar la luminaria.

7. Cambie la lámpara si está dañada o deformada termicamente.

ADVERTENCIA:
INTERFERENCIA RF

1. Este es un producto de Clase A. En el ambiente de la casa este producto puede ocasionar radiointerferencia, en cuyo caso, el usuario debe tomar las medidas adecuadas.

安全性に関する注意事項

ここに記載されている製品を取り扱う場合は、まず本マニュアルおよび付属のマニュアルの安全性に関する情報と説明をすべてお読みください。また、実際に本製品を取り付けたり使用する際には、すべての注意事項および警告に留意して作業してください。

本マニュアルでは、以下の安全マークを使用しています。

注意：製品に損傷を与える危険性があります。

警告：人身事故につながる危険性があります。

感電、火災、UV 放射に対する過度の露出、および人身事故を防ぐための一般的な情報については、以下の説明をお読みください。

警告：
火災の発生を防ぐためのヒント

1. VARI✳LITE® 照明器具は、ランプを使用するように設計されています。ランプを交換する際は、ランプの種類(など) を確認するようにしてください。他の種類のランプを取り付けると危険です。
2. 照明器具は、本マニュアルの指示に従って操作するかぎり、どのようなタイプの表面にでも取り付けることができます。詳細については、本マニュアルを参照してください。
3. ヒューズを交換する場合は、同じヒューズ（同じ種類、同じクラス）を使用してください。
4. VARI✳LITE® 照明器具は、可燃性物質または他の光源から必要な距離だけ離して配置してください。

警告：
感電を防ぐためのヒント

1. VARI✳LITE® 照明器具は、乾燥した環境で使用するように設計されています。雨で濡れる場所や湿気の多い場所に取り付けると、照明器具が傷むことがあります。
2. VARI✳LITE® 照明器具を修理点検する場合は、必ず先に電源を切ってください。
3. 照明器具の修理点検は、資格を持つ技師のみが行うようにしてください。

警告：
過度の UV 放射にさらされないためのヒント

1. VARI✳LITE® 照明器具の多くは、UV 放射を生ずる HID タイプのランプを使用しています。ランプを直視することは避けてください。

2. レンズまたはシールドを使わずに照明器具を点灯すると危険です。レンズ、シールド、紫外線画面は、ひび割れや深い引っかき傷などにより、その効力が損なわれるようになったら取り替えるようにします。

警告：
人身事故を防ぐためのヒント

1. 照明器具が点灯しているときは、その外側が熱くなります。熱くなった器具やコンポーネントを取り扱う際には、適切な防具（手袋や保護用眼鏡）を使用してください。

2. 照明器具が点灯しているときは、そのランプが熱くなります。ランプを交換する場合は、照明器具の電源を切り、ランプの温度が下がるまで待ってください。ランプの裏ぶたをあけると、遮断スイッチが働いて、ランプの電源が切れる場合があります。

3. アーク灯は紫外線を放射します。この紫外線によって、ひどい火傷を負ったり、目の炎症を起こすことがあります。さらに、アーク灯は、高圧高温の状態で光を発します。そのため、万一アーク灯が破損すると、飛び散った破片で人身事故や火災が発生する危険性があります。

4. 再点灯するときには、保護用眼鏡を着用してください。

5. 損傷したランプを取り扱う場合は、適切な防具（手袋や保護用眼鏡）を着用してください。

6. 手袋を着用せずに直接手でランプを触った場合は、変性アルコールを使ってランプをきれいにし、糸くずの出ない布で拭いてから照明器具を取り付け、電源を入れるようにします。

7. 傷がついたランプや熱によって変形したランプは取り替えてください。

警告：
RF 干渉

1. 本製品は Class A に分類されます。本製品は、家庭環境において無線干渉を起こす可能性があります。その場合、使用者は適切な処置を取らなければならないことがあります。

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Appendix B. Technical Specifications

Introduction

About This Manual

This manual provides necessary information regarding safety, installation, operation and routine maintenance for VARI✳LITE VL4000 Spot Luminaire. Familiarizing yourself with this information will help you to get the most out of your product.

WARNING: It is important to read ALL accompanying safety and installation instructions to avoid damage to the product and potential injury to yourself or others.

This manual covers the following models:

Model	Part Number	Lamp Type
VL4000 Spot	20.9704.0001	1200W Short Arc, Philips MSR Gold FastFit

Notes:

- For complete product description, features, and specifications, refer to "Technical Specifications" on page 87.

- For power requirements, refer to "Current vs. Voltage" on page 14.

- VL4000 Spot Luminaire accepts glass gobos only. Use of metal gobos will void the luminaire's warranty.

Additional Documentation

Note: Performing maintenance procedures may void the product warranty. Refer to the Vari-Lite Limited Warranty card included in the product shipping package for more information.

For more information on installing DMX512 control systems, the following publication is available for purchase from the United States Institute for Theatre Technology (USITT), "Recommended Practice for DMX512: A Guide for Users and Installers, 2nd edition" (ISBN: 9780955703522). USITT Contact Information:

> USITT
> 315 South Crouse Avenue, Suite 200
> Syracuse, New York 13210-1844 USA
> Phone: 800-938-7488 or +1-315-463-6463
> Fax: 866-398-7488 or +1-315-463-6525
> Web Site: www.usitt.org

Text Conventions

The following styles and meanings are used throughout this manual:

Style	Meaning
[Button]	Front panel button. Example: Press [ESC].
[Up] / [Down] arrows	Press either [Up] or [Down] arrow button at Menu Display.
LAMP	LCD Menu Display read-out. Example: Press [Up] / [Down] arrows until LAMP appears.

Customer Service

Our Goal

At Vari-Lite, we are committed to providing you the highest quality in customer service. Our comprehensive resources are available to help your business succeed and ensure you get the full benefit of being a Vari-Lite customer. Whether your needs are telephone troubleshooting assistance, product training or technical service, our full-time staff of experienced professionals are on-hand to provide support.

How to Reach Us

For assistance in your area, call the dealer from which your product was purchased.

or Contact an Authorized Service Center

or Contact the Vari-Lite Customer Service Department, 7am - 6pm CST Monday through Friday, at the following:

phone:	1-877-VARI-LITE (1-877-827-4548) or +1-214-647-7880
e-mail:	entertainment.service@philips.com

Additional Resources

For additional resources and documentation, please visit our website at www.vari-lite.com and follow the Support link.

Notes
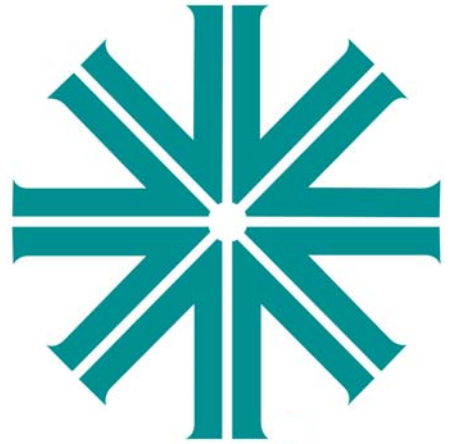
CHAPTER 1.

Description

This chapter contains descriptions of luminaire features and components, along with a list of accessories which are available.

- **Features**

- **Components**

Features

Overview

VL4000 Spot Luminaire feature highlights:

Color System

A three filter CYM cross fading system capable of extremely smooth movements at both slow and fast speeds, and a variable CTO color temperature correction system.

Fixed Color Wheels

Two opposing fixed color wheels each with five interchangeable color filters are capable of producing multi-color effects and variable wheel rotations.

Zoom Optics

A 12-element 5:1 zoom optics system, covering a range from 9° to 47°.

Beam Size Control

A mechanical iris provides continuous beam size control for rapid and smooth timed beam angle changes.

Shutter Control

A four-blade shutter mechanism that allows the blades to be operated independently or in unison on two planes for a clear and crisp image. The entire mechanism can rotate 50º in either direction.

Rotating Gobo Wheels

Two gobo wheels combine to each offer seven rotatable, indexable gobo positions and one open position.

Animation Wheels

Two animation wheels each offer unique rotatable, indexable patterns with variable motion control from horizontal to vertical. Unique Dichro*Fusion pattern is chromatically tuned to provide endless color effects.

Rotating Prism

Independent rotating and indexing 3-facet prism with variable deviation control.

Edge and Pattern Focus

Variable beam focus to soften edges of gobos or spot. Remarkable depth of field capability allows morphing effects between gobo and animation wheels.

Variable Frost

Independent variable frost glass with adjustable softness control.

Intensity Control

Full field dimming designed for smooth timed fades as well as quick dimming effects.

Strobe

High-performance dual blade strobe system capable of ultra-fast operation.
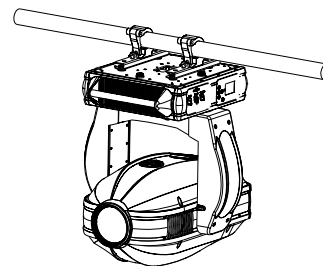
Pan and Tilt

Smooth, time-controlled continuous motion by way of three-phase stepper motor systems.

- Range: Pan - 540°, Tilt - 270°.
- Accuracy: 0.3° resolution.

Weights

Unit weighs (luminaire only, without accessories) 83 lbs (37.7 kg).

Spacing

Unit hangs on 25 inch (635 mm) centers.

Operational Temperature

- Standard Mode: -20° to +104° F (-29° to +40° C)
- Studio Mode: -20° to +122° F (-29° to +50° C)

Control

- DMX: Completely compatible with a wide variety of DMX512 consoles.
- DMX Channels: 57 (Enhanced 16-bit mode) / 52 (16-bit mode)
- RDM Control: Completely compatible with a wide variety of RDM devices.

Power Requirements:

Standard AC power distribution from 200 - 240VAC, 50/60 Hz. The unit requires up to 11.0A depending on the AC supply voltage.

Note: *For a breakdown of total luminaire current draw, see "Current vs. Voltage" on page 14.

Components

Included Items

The following illustration shows all items included with the luminaire:
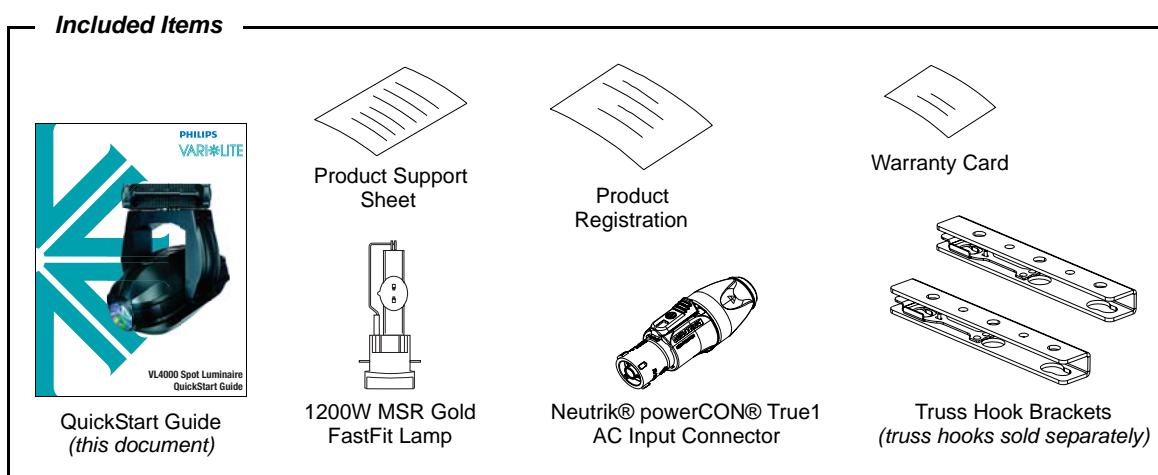
Figure 1-1: VL4000 Spot Luminaire Included Items

Replacement Items/Accessories

The following optional and/or replacement items can be ordered directly from your Authorized VARI✻LITE Dealer. When ordering, please order by the Vari-Lite part number.

Vari-Lite Part No.	Accessory
PCT1BE	AC Input Cable, Neutrik® powerCON® True1 with Bare End (no connector), 1 Meter
PC1GTL208	AC Input Cable, Neutrik® powerCON® True1 with Twist Lock (Male), 250V, 1 Meter
PCT1GP	AC Input Cable, Neutrik® powerCON® True1 with Stage Pin (Male), 1 Meter
PEGASUS	Luminaire Programming Kit
22.9620.0194	Safety Cable Assembly
25.9661.0057	DMX Termination Connector Assembly
55.6840.0001	Truss Hook, Mega-Clamp, Round and Square
55.6841.0001	Truss Hook, Mega-Claw for 2" Round Tube
71.9704.1200	1200W Short Arc Lamp, Philips MSR Gold Fast-Fit*

*For approved lamp types, see the latest version of Vari-Lite technical notice TN-248 in the product downloads section on the Vari-Lite web site, www.vari-lite.com.

Luminaire Components

Below is a brief description of the major components and sub assemblies of the VL4000 Spot Luminaires.

Major Components

Mounting Brackets -

For hanging the fixture. Hooks are sold separately and pipe shown by others

Enclosure Assembly -
Houses ballast, menu system, pan motor, and AC input connection, and DMX512 connections.

See detail below.

Yoke Assembly -
Houses tilt motor and routes cables to / from head and enclosure assemblies.

Luminaire Head Assembly -
Houses CYM color system, CTO, dimmer, gobos, animation wheels, shutter system, strobe, lenses, fixed color filters, reflector, and lamp.

Enclosure Assembly Details

Input Panel -

See "Power" on page 12 and "Connecting Data and Power" on page 23 for more information.

Menu System -

See "Menu Operation" on page 58 for more information.
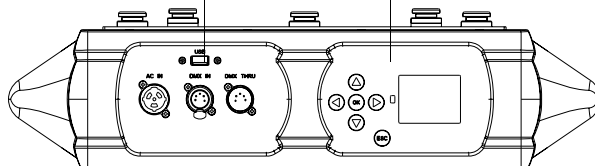
Figure 1-2: Major Components

Sub Assemblies

Head Covers -

Each head cover is held in place with four captive screws and tether.

Lamp / Reflector Assembly

Color System / Dimmer / Strobe

Shutter / Animation / Rotating Gobo Assembly

Lens / Zoom Assembly

Tilt Lock*

Pan Lock*
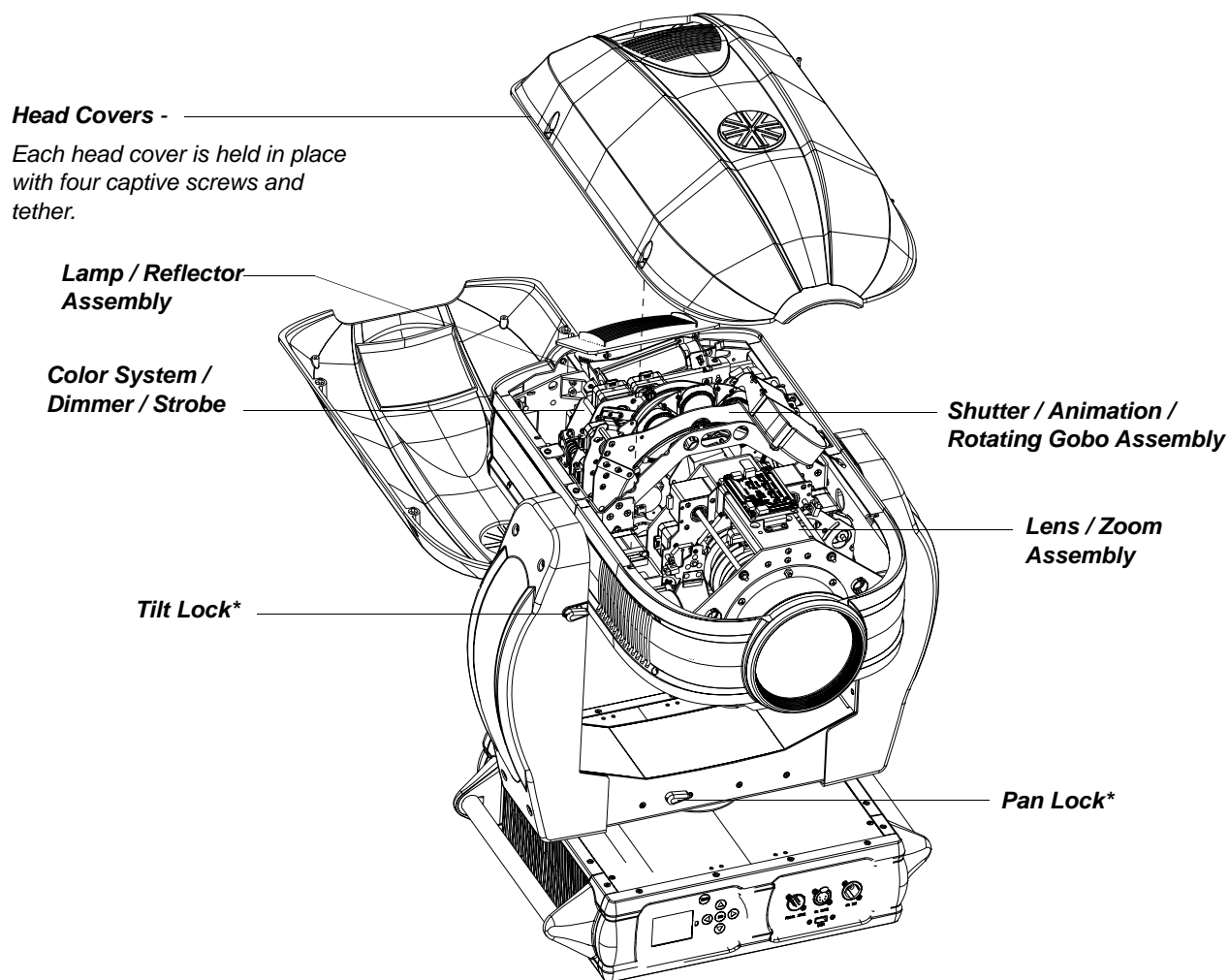
⚠ CAUTION: *Pan and tilt locks must be disengaged before powering and operating luminaire.

1200W Lamp**

Lamp Cover

*NOTE: ** 1200W Philips MSR Gold FastFit lamp (rated for 800-1400W operation) running at 1400W in Standard mode or 1200W in Studio mode.*
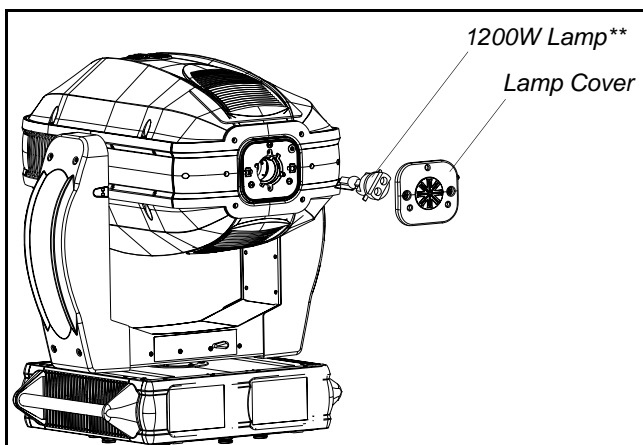
Figure 1-3: Sub Assemblies
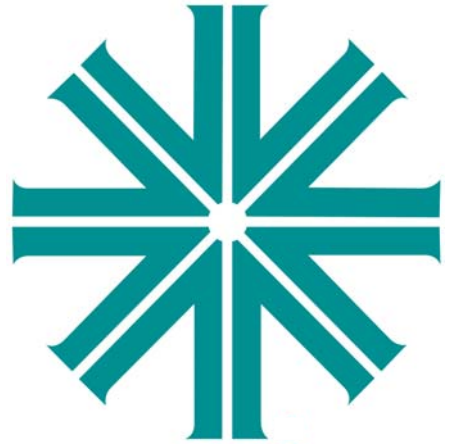
CHAPTER 2.

Installation

This chapter contains instructions for installation of the luminaire. It includes connecting power and data, along with instructions for powering up the luminaire for the first time and addressing it within your system.

- **Power and Data Cabling Requirements**

- **Installation Procedures**

- **Powering Up**

- **Addressing**

- **Transporting**

Power and Data Cabling Requirements

Power

The luminaire requires standard AC power distribution from 200-240 VAC, 50/60 Hz. Current required depends on the AC supply voltage and product model. Refer to "Current vs. Voltage" on page 14 for all models covered in this manual.

Note: The mating Neutrik® powerCON® True1 connector is supplied, however, you will need to purchase or construct a cable appropriate for your application. Available power input cables is found in "Replacement Items/Accessories" on page 8.

AC Power Input
3-Pole Neutrik® powerCON® True1 for AC Input Power

Neutrik® powerCON® True1
AC Input Connector
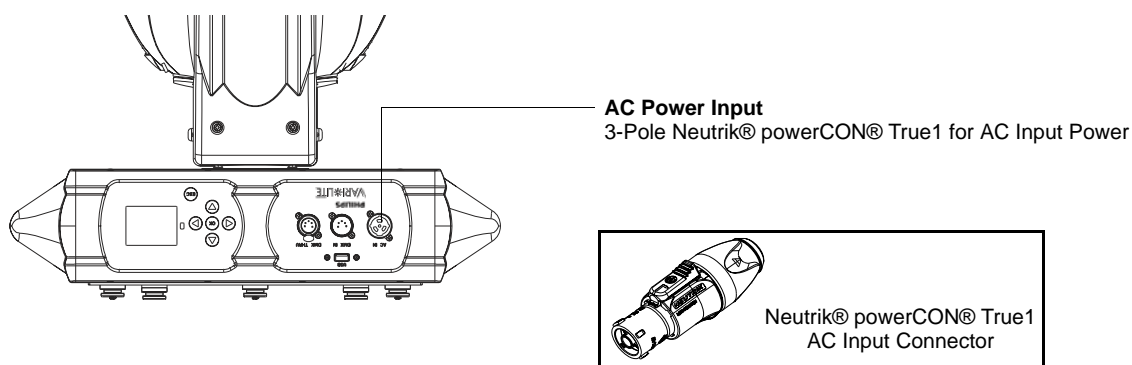
Figure 2-1: Power Connector

Depending on the application, the luminaire's AC input cable may require a different connector. If required, install a new connector meeting your requirements using the following wire color code reference:

Wire*	Connection
Green/Yellow	AC Ground
Blue	AC Neutral
Brown	AC Line

* International (Harmonized) Standard

⚠️ **WARNING:** DO NOT connect to three-phase service in countries with 240 volt power.

For single-phase power at 208 to 240 volts RMS:

Connection	Pin
AC Neutral	X
AC Line	Y
Ground (Earth)	G
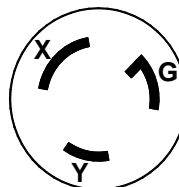
For three-phase power at 208 volts RMS:

Connection	Pin
Phase 1	X
Phase 2	Y
Ground (Earth)	G
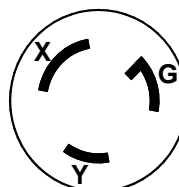
⚠️ **WARNING:** It is not recommended to power any VARI✳LITE luminaire from a dimmer - even in 'NONDIM' mode. Dimmer and non-dim modules are not suitable sources of power because their output modifies the AC wave form. This may work for a short time, but will eventually result in power problems, luminaire mis-operation and/or failure and may void the luminaire's warranty.

Current vs. Voltage

Table 2-1, VL4000 Spot Luminaire - Current vs. Voltage (1200W Lamp*) provides the luminaire's current draw at specific voltages. Total Luminaire Current is calculated with the lamp on and all motors sequencing.

WARNING: It is the responsibility of the user to adequately protect supply source with a correct size and type circuit breaker and not overload circuits. **AVERTISSEMENT:** Il est de la responsibilité de l'utilisateur de protéger adéquatement la source d'alimentation avec une taille correcte et le disjoncteur de type et surchargez pas les circuits.*

Table 2-1: VL4000 Spot Luminaire - Current vs. Voltage (1200W Lamp*)

AC Voltage @ 60Hz	Total Luminaire Current (Motor + Lamp Current)
200V	11.0A
210V	10.5A
220V	10.0A
230V	9.6A
240V	9.2A

Note: *1200W Philips MSR Gold FastFit lamp (rated for 800-1400W operation) running at 1400W in Standard mode or 1200W in Studio mode.

**WARNING:** It is not recommended to power any VARI∗LITE luminaire from a dimmer - even in 'NONDIM' mode. Dimmer and non-dim modules are not suitable sources of power because their output modifies the AC wave form. This may work for a short time, but will eventually result in power problems, luminaire mis-operation and/or failure and may void the luminaire's warranty.

Data Cables
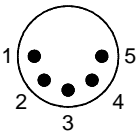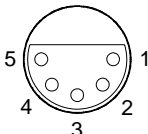
The luminaire is equipped with two, 5-pin XLR connectors for DATA IN and DATA THRU (out) applications. DATA IN requires a 5-pin, female XLR connector and DATA THRU requires a 5-pin, male XLR connector. When purchasing or constructing data cables, it is important that not only the correct cable type be used, but also quality cable to ensure a reliable DMX512 system. Your cabling should meet the following USITT DMX specification requirements:

• Suitable for use with EIA485 (RS485) operation at 250k baud.

• Characteristic impedance 85-150 ohms, nominally 120 ohms.

• Low capacitance.

• Two twisted pairs.

• Foil and braid shielded.

• 24 AWG min. gauge for runs up to 1000 feet (300m).

• 22 AWG min. gauge for runs up to 1640 feet (500m).

Note: Microphone type cables and other general purpose, two-core audio or signal cables are not suitable for use with DMX512.

Refer to the USITT Recommended Practice for DMX512 guide for additional information regarding DMX512 systems. How to obtain a copy is detailed in "Additional Documentation" on page 2.

The XLR 5-pin connectors should be wired as follows:

Pin/Wire Code to XLR Connectors						
Data Thru Cable Pinout	**Pin 1**	**Pin 2**	**Pin 3**	**Pin 4**	**Pin 5**	Data In Cable Pinout
Male Conn.	Foil & Braided Shield	1st conductor of 1st twisted pair Data (-)	2nd conductor of 1st twisted pair Data (+)	1st conductor of 2nd twisted pair Data (-)	2nd conductor of 2nd twisted pair Data (+)	Female Conn.

Recommended Cable Types/Manufacturers

These are only a few of the suitable cable types. Any quality EIA485, twisted pair, 120 ohm, shielded cable will also work.

Type	Pairs	ZΩ*	Jacket	AWG	Use	Temp (F)
Belden Cables						
1215A	2	150	PVC	26	IBM Type 6 Office cable	75
1269A	2	100	PTFE	22 (Solid)	High Temp, Plenum cable	200
8102	2	100	PVC	24	UL2919	80
8132	2	120	PVC	28	UL2919	80
8162	2	100	PVC	24	UL2493	60
82729	2	100	PTFE	24	High Temp, Plenum cable	200
88102	2	100	PTFE	24	High Temp, Plenum cable	200
89696	2	100	PTFE	22	High Temp, Plenum cable	200
89729	2	100	PTFE	24	High Temp, Plenum cable	200
89855	2	100	PTFE	22	High Temp, Plenum cable	200
9729	2	100	PVC	24	UL2493	60
9804	2	100	PVC	28	UL2960	60
9829	2	100	PVC	24	UL2919	80
9842	2	120	PVC	24	UL2919	80
Proplex Cables						
PC224P	2	110	Polyure-thane	22	Heavy Duty and Portable	105
PC224T	2	110	PVC	22	UL2464	105
PC226T	3	110	PVC	22	UL2464	

* Characteristic Impedance

Termination Connector

A XLR termination connector is required at the last luminaire (or "far end of the line") to prevent signal reflections. Signal reflections may cancel out the signal at certain line lengths, resulting in errors. The terminator is also necessary for software downloads and running tests on multiple luminaires. To construct your own connector, you will need the following components:

Solder resistors across pins 2 & 3, and 4 & 5

•   5-pin, male XLR connector.

•   Two 1/4W 5% 120 ohm resistors.
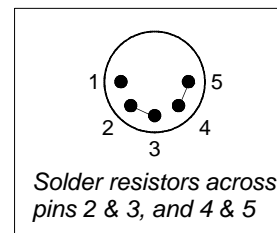
Note: A male termination connector is available as an accessory from Vari-Lite. See "Replacement Items/Accessories" on page 8.

Installation Procedures

Installing Lamp

In the event the lamp was packed separately during shipment, follow the procedure in this section. For lamp removal and replacement, refer to .

WARNING: Disconnect fixture before relamping. Déconnectez le projecteur avant que le changement de lampe.

CAUTIONS & WARNINGS

• Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use isopropyl alcohol and cotton cloth to thoroughly clean glass portion of lamp.

• Hot Lamp. Luminaire must remain powered on for 5 minutes after dousing lamp. Do not open for 5 minutes after switching off. Lampe chaude. Le luminaire doit rester en marche pendant 5 minutes après avoir éteindre la lampe. Ne pas ouvrir pendant 5 minutes après la coupure.

• Risk of exposure to excessive ultraviolet radiation. Do not operate without complete lamp enclosure in place or when lens is damaged. Risque d'exposition aux rayonnements ultraviolets excessifs. Ne pas faire fonctionner sans le boîtier complet de lampe mis en place ou lorsque l'objectif est endommagé.

To install lamp:

Step   1.   Ensure power is completely removed from luminaire.

Step   2.   Remove lamp from shipping box.

Step   3.   Set the luminaire head horizontally.

Step   4.   Engage tilt lock to secure luminaire head in position.

Step   5.   At back of luminaire, using #2 Phillips screwdriver, remove lamp socket cover by loosening the two quarter-turn captive screws. Note: lamp socket cover is connected with a safety tether.
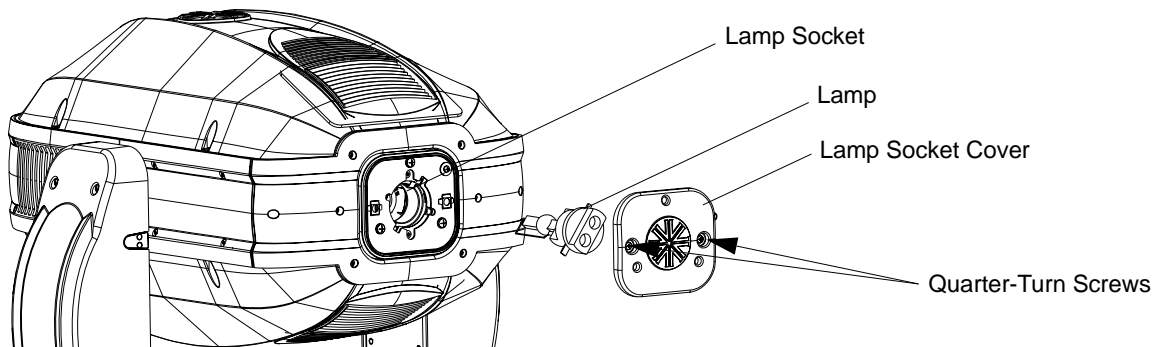
Figure 2-2: Lamp Socket Cover Removal

Step   6. As shown in Figure 2-3, align lamp tabs with lamp socket.

Align tabs of lamp with socket when installing

Lamp*

NOTE: * "Bow" of lamp must be oriented with "Slot" in reflector.

Bow

Lamp Socket Cover
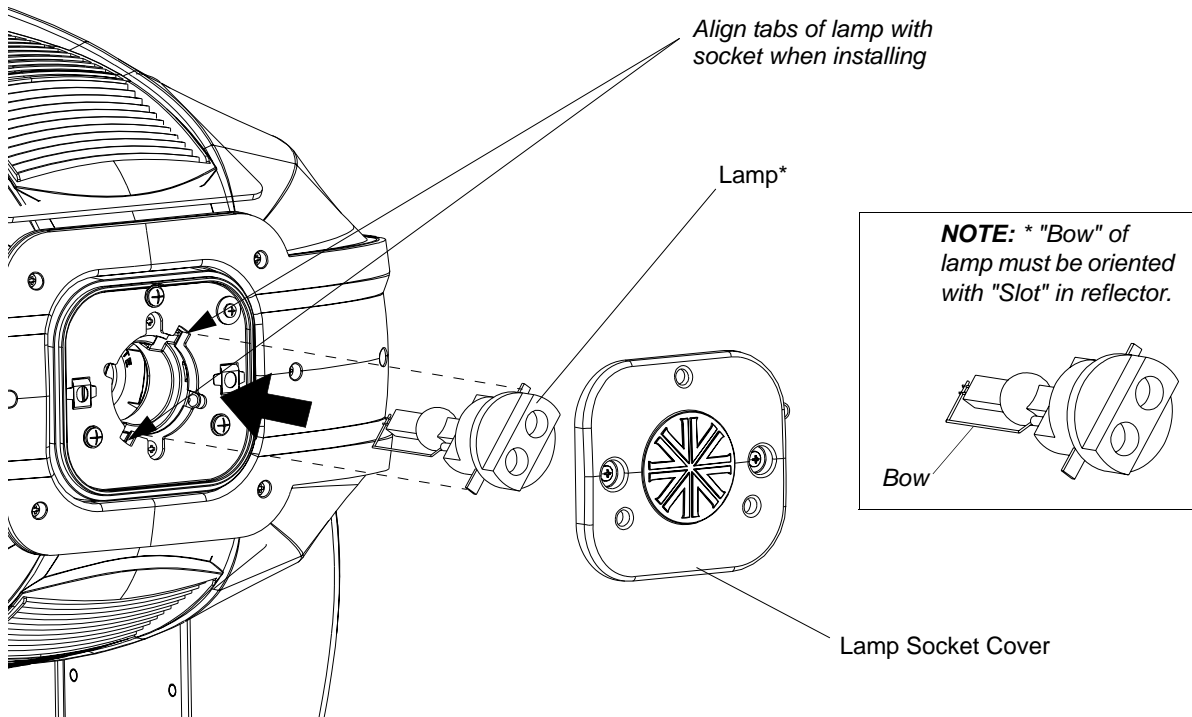
Figure 2-3: Lamp Installation

Step   7. Install lamp fully into lamp socket, taking care not to touch lamp glass.

Step   8. Turn lamp clockwise to seat lamp into socket. Lamp base should be aligned as illustrated in Figure 2-4.

Lamp

Note alignment of fully seated lamp

Ensure lamp is completely seated before reinstalling lamp socket cover.
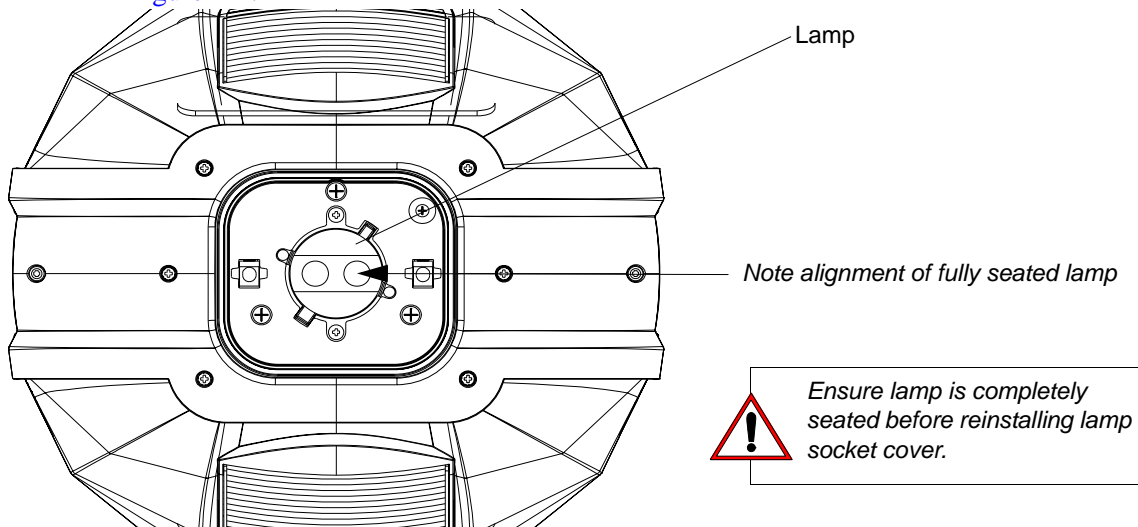
Figure 2-4: Installed Lamp

Step   9. Reinstall lamp socket cover. Make sure safety tether is completely encapsulated within lamp socket cover.

Step 10. Disengage tilt lock to allow luminaire head to move freely.

Step 11. Align lamp as described in "Align Lamp For Maximum Beam Irradiance" on page 19.

Align Lamp For Maximum Beam Irradiance

After a new lamp is installed in the luminaire, it will be necessary to align the lamp to optimize the beam.

WARNING: Backcap and alignment screws will be HOT during lamp operation. Wear gloves and/or use tools to prevent burns.

To align lamp:

Step 1. Set intensity to 100%.

Step 2. Position beam on a white wall at a distance of 10 to 20 feet.

Step 3. Using console or internal luminaire menu controls, set zoom to zero and focus to a hard edge. Be sure that beam-size iris is completely opened.

Step 4. Using console or internal luminaire menu controls, insert Bricked Out gobo. This aids in locating beam hot spot.

Step 5. Using three alignment screws (as indicated with Red Arrows in Figure 2-5) adjust hot spot to center of beam.

Lamp (Beam) Alignment Screws*

Rear of Luminaire

Do not loosen or use these screws for adjustment.
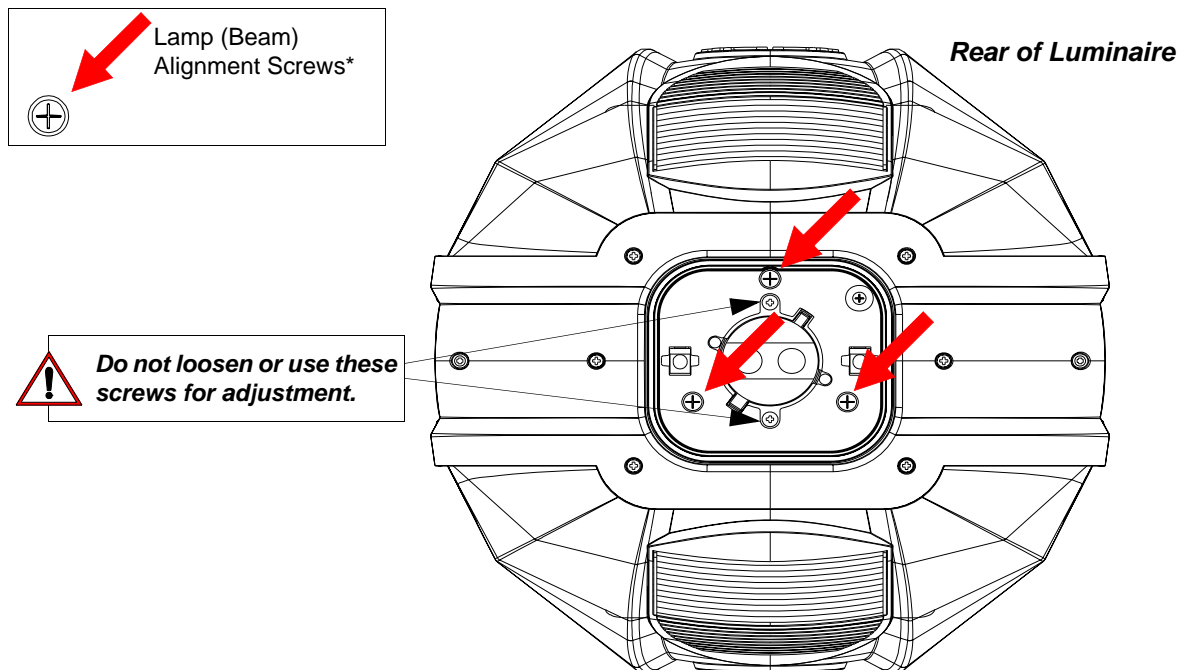
NOTE: *Lamp Socket Cover removed for clarity. It is not necessary to remove Lamp Socket Cover to align lamp.

Figure 2-5: Lamp Alignment Screws

Hanging the Luminaire

The VL4000 Spot Luminaire can be hung horizontally or vertically from any structure designed to work with the type of load created by this moving luminaire. Two mounting truss hooks or other mounting hardware are required. Many compatible truss hooks are available from different manufacturers for your particular needs.

A minimum of two hooks per luminaire is required. If mounting method does not use truss hooks, two attachment points, per luminaire, are required.

Install mounting hardware and brackets:

Step   1. Install truss hooks on two provided truss hook brackets as required as shown in Figure 2-6.
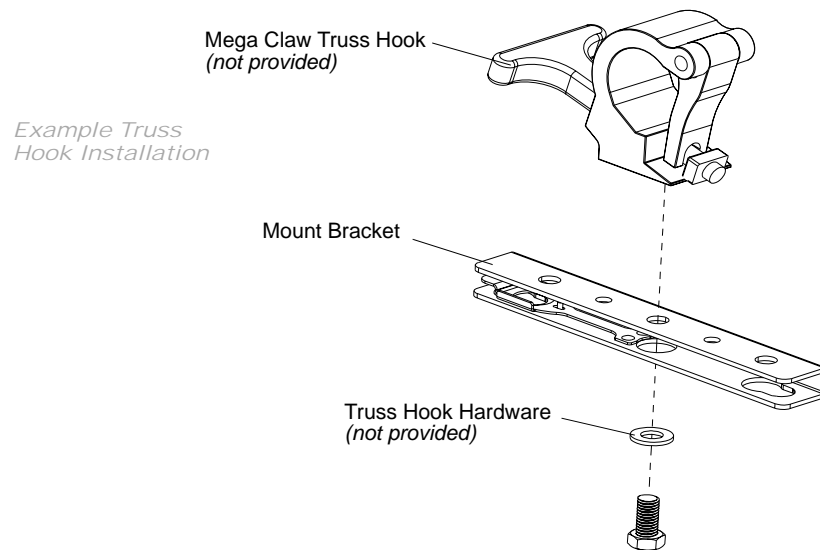
Figure 2-6: Truss Hook Installation

Note: Various types of truss hooks can be used. The Mega Claw truss hook (as shown in the example above) as well as many other standard hooks, can be ordered separately.

Step   2. Determine required configuration of bracket installation. Brackets may be installed in many different orientations as shown in Figure 2-7.

Step   3. While pulling up on locking mechanism release, fit keyed holes onto raised mounting buttons at bottom of enclosure. Slide forward and release locking mechanism to lock in place. Ensure brackets are locked securely.

⚠ **WARNING:** Ensure that the bracket locking mechanism is fully seated after the bracket is installed on the luminaire. **AVERTISSEMENT:** Assurez-vous que le mécanisme de support de verrouillage est complètement inséré après le support est installé sur l'appareil.

Example Truss Hook and Mounting Hardware *(not included, sold separately)*

Mount Bracket*

Raised Mounting Buttons (8 each)

Fit bracket's keyed hole and locking mechanism over raised mounting buttons and slide forward to lock.

Locking Mechanism

Locked

Mount Bracket

Locking Mechanism

Press up to install or release

Keyed Hole

Bracket Orientation

Brackets

Example Bracket Orientations

Figure 2-7: Installing Brackets on Luminaire Enclosure

Installing in Truss:

Step 1. Using two people, lift luminaire into mounting position.

Step 2. Secure in place with truss hook. Ensure truss hook hardware that locks hook in place (e.g. wing bolt) is properly tightened and that luminaire is fully supported.

Step 3. Attach safety cable (as required) as follows (refer to Figure 2-8 on page 22):

    a. Loop safety cable at least once around safety cable anchor point rod.

    b. Loop safety cable at least once around truss/pipe and secure around pipe.

⚠️ **Safety Cable:** *Recommended for hanging installations. May be required by local codes. Safety cable is sold separately.*
Câble de sécurité: *Recommandé pour les installations pendaison. Peut être exigé par les codes locaux. Câble de sécurité est vendu séparément.*

Safety Cable Anchor Point
(see note)

₵

25.00 in.
[635.0 mm]

₵

31.80 in.
[807.7 mm]

22.46 in.
[570.5 mm]

24.57 in.
[624.1 mm]

Note, truss hooks shown are sold separately. Truss and pipe by others.

Safety Cable Anchor Point

NOTE: *The safety cable anchor point is tested and is in compliance of the following safety standards:*
- IEC / EN 60598-2-17.6.6
- UL1573

Figure 2-8: Safety Cable Installation / Luminaire Hanging

Step   4. Make sure tilt and pan locks are disengaged so luminaire moves freely.

Step   5. Connect power and data cables according to procedure given in "Connecting Data and Power" on page 23.

Floor Mounting the Luminaire

All luminaires included in this manual are designed to sit directly on its base in a floor installation application. When used in this type of application, be sure to leave enough space around the luminaire to allow proper, uninterrupted airflow for cooling and movement.

Connecting Data and Power

A maximum of 32 luminaires may be connected in any one DMX data link.

Note: This maximum limit applies to the luminaire "daisy chain" only. Your system or console may require fewer luminaires on a single data link path. Consult your console documentation for more information.

To connect power and data:

Step 1. Connect data cable from console to first luminaire in chain at DATA IN connector.

Step 2. If required, connect additional data cables from DATA THRU connectors to DATA IN connectors of remaining luminaires in link.

Step 3. At last luminaire in link, install male termination connector at DATA THRU connector. (Luminaires and other devices on the same DMX chain may not function properly without termination.)
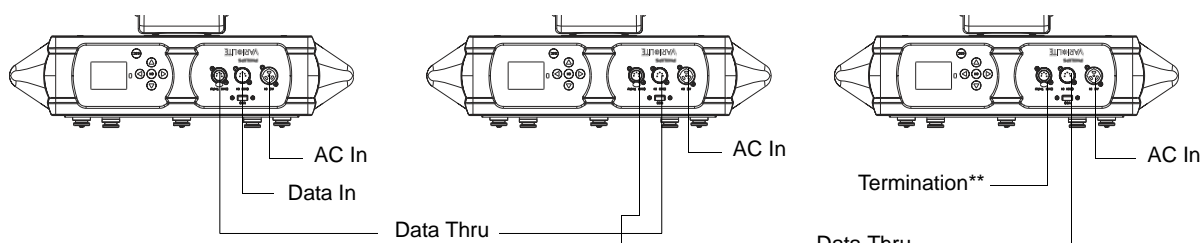
VL4000 Spot Luminaire Channel Requirements*		
DMX512 Channels	**Description**	**Menu Display**
57 Channels	Enhanced 16-Bit Mode *(default)*	16E
52 Channels	16-Bit Mode	16
As set by the luminaire's menu system.		

***DMX terminator required for last fixture on DMX line.*

Figure 2-9: Data Link

Step 4. Connect AC Input Cable connector to power input source.

Step 5. Dress AC input and data cables and secure them so that they will not interfere with luminaire head and yoke movement.

Powering Up

Power-Up Procedure

When the luminaire is powered up for the first time, the default setting is enabled and the lamp will remain off. When AC power is applied, the luminaire will immediately begin a calibration sequence that steps it through full pan and tilt movements. The internal color and beam mechanisms will also move through a full range of motion. After calibration, the luminaire head will either stop at its "home" position (which positions the pan axis at mid-rotation and the head parallel to the yoke with the lens pointing away from the luminaire enclosure) or move to its current DMX-defined position if DMX data is present. All internal mechanisms also move to their "home" or DMX-defined positions.

CAUTION: Before applying power, be sure the luminaire is hung (or positioned), and the pan and tilt locks are disengaged, so that the head and yoke can move freely without restriction.

To power up:

Step 1. At each luminaire, apply power connecting the power cable to the unit.

Step 2. Luminaire will automatically step through calibration and stop at "home" position (only if DMX is not present).

Addressing

Program Starting Address

The address setting for DMX console controlled systems is entered using the Menu Display (refer to "Menu Operation" on page 58). The luminaire retains the DMX address even if power is removed.

Note: Refer to your console operating instructions for specific information regarding its addressing requirements.

DMX Address

To set, edit, and save a DMX address:

Step   1. Press [ESC].

Step   2. Press [Up] / [Down] arrows until Address appears. Press [OK].

Step   3. Use [Left] and [Right] arrow buttons to scroll through all digits.

Step   4. Once at desired digit, use [Up] and [Down] arrows to change highlighted digit.

Step   5. Once digit is set, use [Left] and [Right] arrow buttons to set other digits in DMX address.

Step   6. Once all digits are set in DMX address, press [OK] to set.

Step   7. DMX will display and is saved.

Program Starting Address Without Calibrating Luminaire

It is possible to bypass the calibration sequence and go directly to the Menu Display programming in order to pre-program an address setting.

Program starting address without calibrating luminaire:

•   While powering up luminaire, press and hold [ESC].

•   When display changes from "Starting" to the DMX address, program address as in Program Starting Address above.

⚠ **Note:** The luminaire will require a reset to restore control.

Program starting address in Battery Mode:

•   To activate menu in Battery Mode when the fixture is not connected to a power source, press [OK] and [ESC] together. The LCD screen will come on. Address the fixture as described above. The LCD screen will shut off after one minute of inactivity.

Transporting

Overview

When shipping or transporting VARI✳LITE Luminaires, Vari-Lite recommends that the luminaire(s) be sufficiently protected against any (including, but not limited to) shock, vibration, drops, jarring, exposure to the environment, etc.

Failure to sufficiently protect any VARI✳LITE luminaire during shipping or transportation will result in damage and void the luminaire's warranty. Vari-Lite will not be responsible for any shipping damage or breakage of any product under any circumstances. Vari-Lite will not be responsible for any third party case manufacturer's cases.

Note: As with all automated luminaires, proper handling and suitable protective shipping cases should be used when transporting fixtures to reduce the risk of damage. For more information, please refer to Vari-Lite technical notice (TN-235) "Transportation and Shipping Case Requirements" in the "Support" area of the Vari-Lite web site.

Transportation and Shipping Case Requirements

Cases to transport VARI✳LITE luminaires should meet the following loading requirements:

- Luminaire head, yoke, and enclosure sub-assemblies shall be equally supported and constrained where no one sub-assembly (head, yoke, or enclosure) fully supports the entire mass of the luminaire.

- The interior of the case shall be of high quality and uniform density foam. The foam shall be of the same type and density throughout as to equally and uniformly support loading at every contact surface.

- The case shall, when laid on any of its six (6) surfaces, maintain the loading requirements outlined above.

- All cases not meeting the aforementioned loading requirements, with wheels, shall have markings on the exterior of the case that the unit is to be transported on it wheels only (e.g. "Case must be transported and remain [at all times] on its wheels").
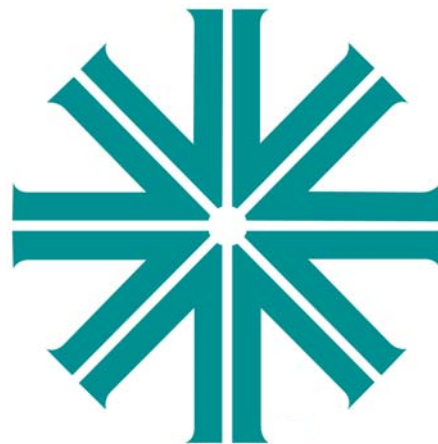
CHAPTER 3.

Operation

This chapter contains instructions for operating the luminaire using DMX control and for updating the internal software.

- **Color Control & Gobos**

- **DMX Operation**

- **Luminaire Timing**

- **Updating Software**

Color Control & Gobos

The following is a brief description of each color control and gobo projection capabilities.

Color Mixing

The VL4000 Spot Luminaire provides full CYM color cross-fading and two fixed color wheels.

• The CYM color system offers a three filter CYM cross fading system capable of extremely smooth movements at both slow and fast speeds, and a variable CTO color temperature correction system.

• Each fixed color wheel holds 5 fixed colors for rich color projection and snap color changes. The two fixed color wheels are opposing wheels. Each wheel features five interchangeable color filters that are capable of producing multi-color effects and variable wheel rotations.

Fixed Color Wheel 1

Fixed Color Wheel 1holds five color filters and has one open space as illustrated in Figure 3-1. Note, the open space will not accommodate a filter.

Red

Open
(No Filter)

Congo Blue

Dark Fuchsia

Kelly Green

NOTE: Colors show for illustrative
purposes only. Actual colors will differ.

Orange
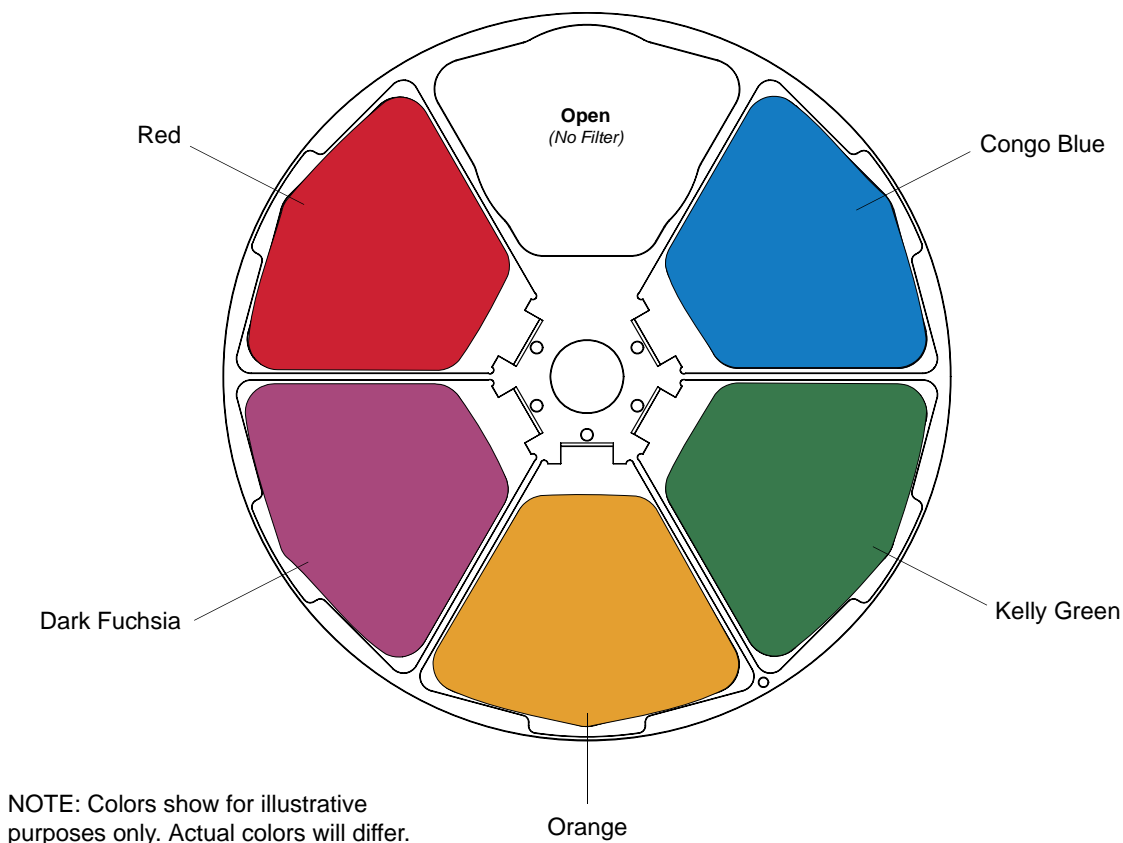
Figure 3-1: VL4000 Spot Fixed Color Wheel 1

Fixed Color Wheel 2

Fixed Color Wheel 2 holds five color filters and has one open space as illustrated in Figure 3-2. Note, the open space will not accommodate a filter.

Open
(No Filter)

Amber

Blue

Lavender

Green

Minus Green

NOTE: Colors show for illustrative
purposes only. Actual colors will differ.
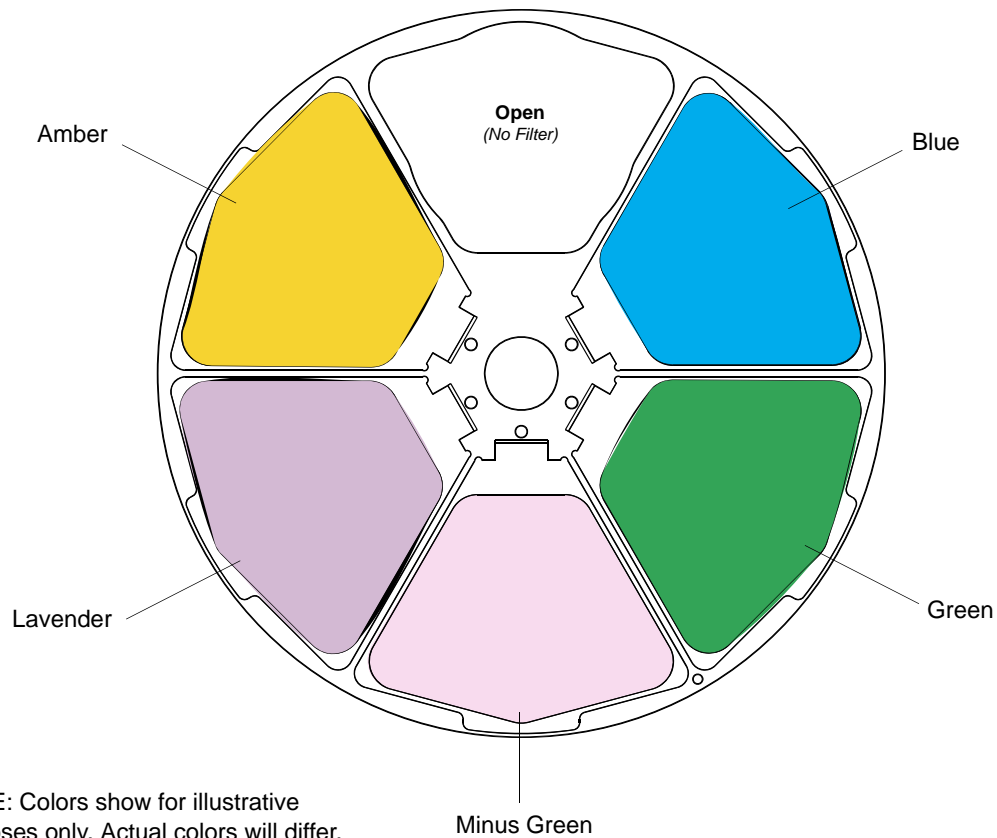
Figure 3-2: VL4000 Spot Fixed Color Wheel 2

Gobos

Each luminaire contains two rotating gobo wheels. Each rotating gobo wheel offers seven rotatable, indexable gobo positions and one open position.

⚠ **CAUTION:** VL4000 spot luminaires accept glass gobos only. Use of metal gobos in these luminaires may damage gobo assembly and will void the luminaire warranty.

Note: For all available patterns and their associated numbers, refer to VARI✳IMAGE System page on the Philips Vari-Lite web site or contact your local regional sales manager or Authorized VARI✳LITE Dealer.

Rotating Gobo Wheel 1

Standard load rotating gobos for Rotating Gobo Wheel 1 are shown in Figure 3-3 and described in Table 1, "Rotating Gobo Wheel 1 - Standard Effects and Positions".

Table 1: Rotating Gobo Wheel 1 - Standard Effects and Positions

Position	Gobo	Gobo Part Number
0 (Open)	None	None
1	Alpha Waves	41.9704.4421
2	Leafy Breakup	41.9704.4422
3	Neurons V2	41.9704.4423
4	Night Sky	41.9704.5011
5	Bricked Out	41.9704.4425
6	On The Rocks (gag)	41.9704.8511
7	Droplets (gag)	41.9704.8506
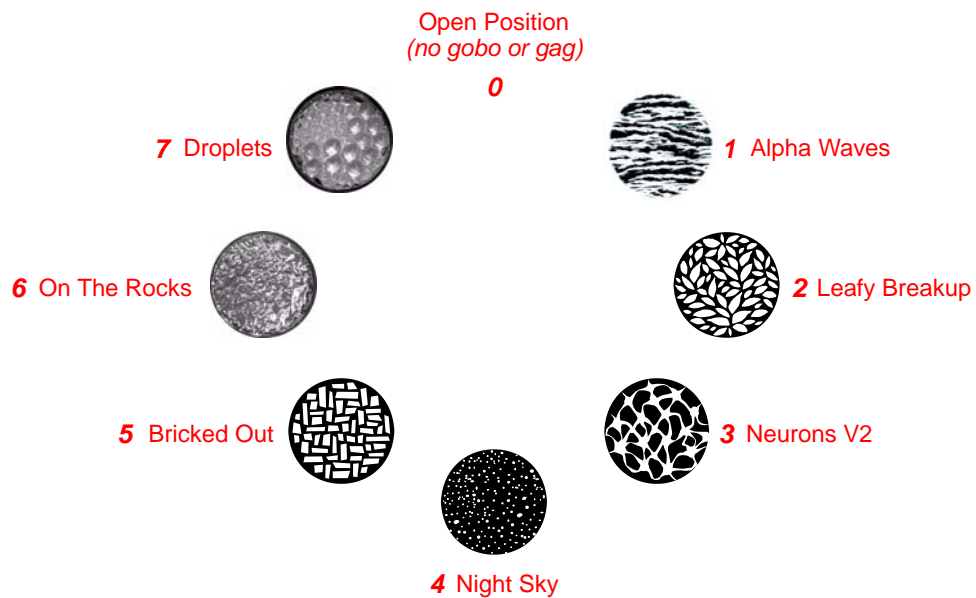
Figure 3-3: Rotating Gobo Wheel 1 - Standard Gobo Load

Rotating Gobo Wheel 2

Standard load rotating gobos for Rotating Gobo Wheel 2 are shown in Figure 3-4 and described in Table 2, "Rotating Gobo Wheel 2 - Standard Effects and Positions," on page 31.

Table 2: Rotating Gobo Wheel 2 - Standard Effects and Positions

Position	Gobo	Gobo Part Number
0 (Open)	None	None
1	Circle of Eights	41.9704.4411
2	Punch Card	41.9704.4412
3	Vertical Bars	41.9704.4413
4	Lattice	41.9704.4414
5	Wavy Triangle	41.9704.4415
6	Dot Buffet	41.9704.4416
7	Quadcone, Red	41.9704.4291
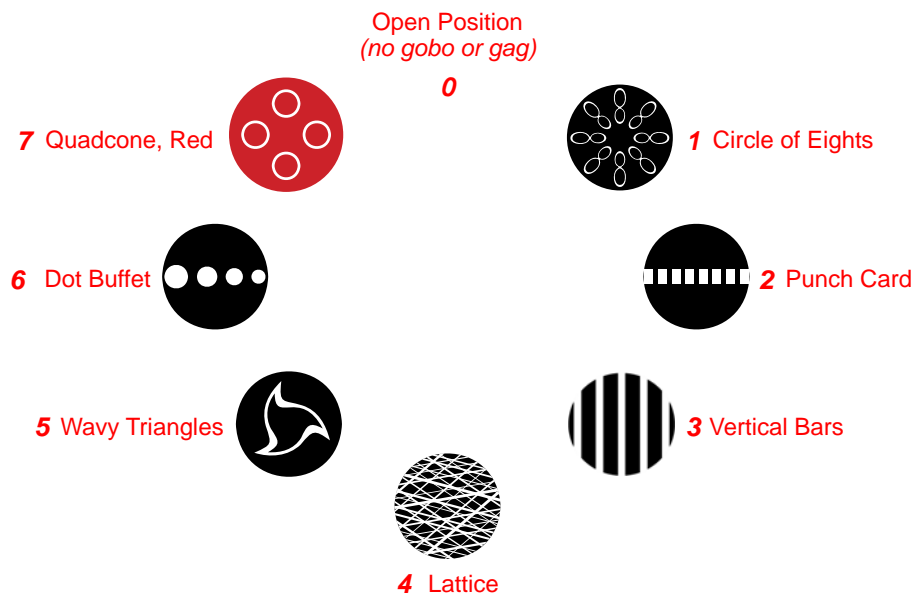
Figure 3-4: Rotating Gobo Wheel 2 - Standard Gobo Load

Animation Wheels

The VL4000 spot luminaire has two animation wheels. Each offers unique rotatable, indexable patterns with variable motion control from horizontal to vertical.

Animation Wheel 1 - Dichro*Fusion

Figure 3-5 shows Animation Wheel 1. This unique Dichro*Fusion pattern is chromatically tuned to provide endless color effects.
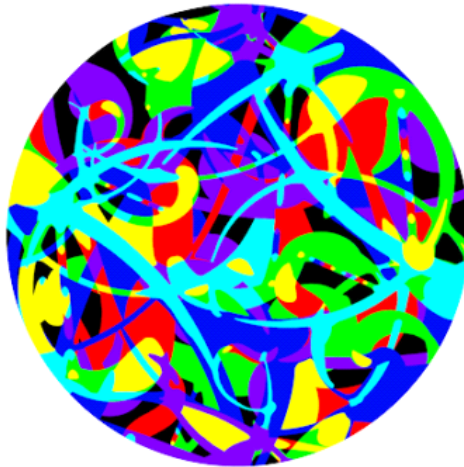
Figure 3-5: Animation Wheel 1 - Dichro*Fusion

Animation Wheel 2 - Wicked Waves

Figure 3-6 shows Animation Wheel 2.
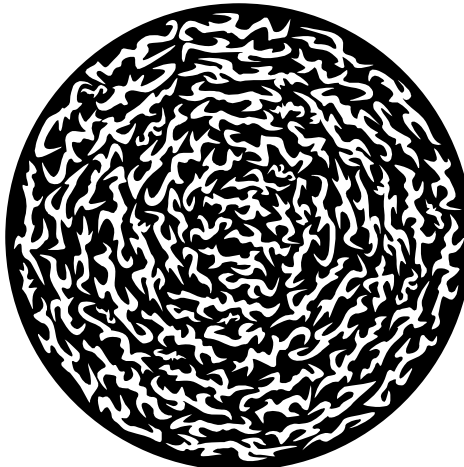
Figure 3-6: Animation Wheel 2 - Wicked Waves

DMX Operation

VL4000 Spot Channel Mapping

These tables assume a DMX start address of 1. When a different starting address is used, this address becomes channel 1 function and other functions follow in sequence.This section contains the DMX channel maps for the VL4000 Spot Luminaire. Users can select one of two maps as detailed in these sections:

• "Enhanced 16-Bit Channel Mapping (Default)" *(starting below)*

• "16-Bit Channel Mapping" on page 38.

Enhanced 16-Bit Channel Mapping (Default)

Table 3 provides DMX channel mapping of the DMX512 control values when the VL4000 Spot Luminaire is in Enhanced 16-Bit DMX mode (as set by the luminaire's menu system).

Table 3: VL4000 Spot Enhanced 16-Bit DMX Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
1	Intensity	0 - 255	0 - 100%	0	8-bit control of Fixture Intensity from 0 - 100%
2	Pan High Byte	0 - 65535	0 - 100%	32767	16-bit linear control of pan from 0° to 520°.
3	Pan Low Byte				
4	Tilt High Byte	0 - 65535	0 - 100%	32767	16-bit linear control of tilt from 0° to 270°.
5	Tilt Low Byte				
6	Edge High Byte	0 - 65535	0 - 100%	0	16-bit linear control of edge functions.
7	Edge Low Byte				
8	Zoom High Byte	0 - 65535	0 - 100%	0	16-bit linear control of fixture zoom range between 0 (9 degrees) to 65535 (47 Degrees).
9	Zoom Low Byte				
10	Programming Control	0 - 255	0 - 100%	0	Used as a control channel for different programmable settings. Control Set discreet value of desired effect, wait >3 seconds, then set value to 0 (Idle). 0 - 2 = Idle *3 - 10 = Reserved Values* 11 - 15 = Dimmer Snap OFF 16 - 20 = Dimmer Snap ON (Fixture Default)
11	Cyan	0 - 255	0 - 100%	0	Controls Cyan color mechanism.
12	Yellow	0 - 255	0 - 100%	0	Controls Yellow color mechanism.
13	Magenta	0 - 255	0 - 100%	0	Controls Magenta color mechanism.
14	CTO	0 - 255	0 - 100%	0	Controls CTO mechanism.
15	Fixed Color Wheel 1	0 - 255	0 - 100%	0	8-bit control of Color Wheel 1. ***See Channel 16 for options.*** 0 - 23 = OPEN 24 - 69 = RED (Center at DMX 46) 70 - 116 = DARK FUCHSIA (Center at DMX 93) 117 - 162 = ORANGE (Center at DMX 139) 163 - 209 = KELLY GREEN (Center at DMX 186) 210 - 255 = CONGO BLUE (Center at DMX 232)

Table 3: VL4000 Spot Enhanced 16-Bit DMX Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
16	Fixed Color Wheel 1 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options of Color Wheel 1. 0 - 5 = Linear Movement using shortest (quickest) path. 6 - 10 = Linear Movement using normal (longest) path. 11 - 15 = Wheel Spin Forward (Fast to Slow) 16 - 20 = Wheel Spin STOP 21 - 25 = Wheel Spin Reverse (Slow to Fast) 26 - 56 = Color Shake Quickest Path (Slow to Fast) 57 - 87 = Color Shake Normal Path (Slow to Fast) *88 - 255 = Reserved Values*
17	Fixed Color Wheel 2	0 - 255	0 - 100%	0	8-bit control of Color Wheel 2. ***See Channel 18 for options.*** 0 - 23 = OPEN 24 - 69 = BLUE (Center at DMX 46) 70 - 116 = GREEN (Center at DMX 93) 117 - 162 = MINUS GREEN (Center at DMX 139) 163 - 209 = LAVENDER (Center at DMX 186) 210 - 255 = AMBER (Center at DMX 232)
18	Fixed Color Wheel 2 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options of Color Wheel 2. 0 - 5 = Linear Movement using shortest (quickest) path. 6 - 10 = Linear Movement using normal (longest) path. 11 - 15 = Wheel Spin Forward (Fast to Slow) 16 - 20 = Wheel Spin STOP 21 - 25 = Wheel Spin Reverse (Slow to Fast) 26 - 56 = Color Shake Quickest Path (Slow to Fast) 57 - 87 = Color Shake Normal Path (Slow to Fast) *88 - 255 = Reserved Values*
19	Rotating Gobo Wheel 1	0 - 255	0 - 100%	0	8-bit control of Rotating Gobo Wheel 1. ***See Channel 22 for control options.*** 0 - 5 = Open - No Gobo 6 - 10 = Gobo 1 (Alpha Waves) Index 11 - 15 = Gobo 2 (Leafy Breakup) Index 16 - 20 = Gobo 3 (Neurons V2) Index 21 - 25 = Gobo 4 (Night Sky) Index 26 - 30 = Gobo 5 (Bricked Out) Index 31 - 35 = Gobo 6 (On the Rocks) Index 36 - 40 = Gobo 7 (Droplets) Index 41 - 45 = Open - No Gobo 46 - 50 = Gobo 1 (Alpha Waves) Rotate 51 - 55 = Gobo 2 (Leafy Breakup) Rotate 56 - 60 = Gobo 3 (NeuronsV2) Rotate 61 - 65 = Gobo 4 (Night Sky) Rotate 66 - 70 = Gobo 5 (Bricked Out) Rotate 71 - 75 = Gobo 6 (On the Rocks) Rotate 76 - 80 = Gobo 7 (Droplets) Rotate 81 - 85 = Open - No Gobo 86 - 90 = Gobo 1 (Alpha Waves) Rotate with Mega Stepping 91 - 95 = Gobo 2 (Leafy Breakup) Rotate with Mega Stepping 96 - 100 = Gobo 3 (Neurons V2) Rotate with Mega Stepping 101 - 105 = Gobo 4 (Night Sky) Rotate with Mega Stepping 106 - 110 = Gobo 5 (Bricked Out) Rotate with Mega Stepping 111 - 115 = Gobo 6 (On the Rocks) Rotate with Mega Stepping 116 - 120 = Gobo 7 (Droplets) Rotate with Mega Stepping *121 - 255 = Reserved Values*
20	Rotating Gobo Wheel 1 Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Rotating Gobo Wheel 1 index and rotation. Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
21	Rotating Gobo Wheel 1 Index / Rotate - Low Byte				

Table 3: VL4000 Spot Enhanced 16-Bit DMX Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
22	Rotating Gobo Wheel 1 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options for Rotating Gobo Wheel 1 (Channel 19). 0 - 5 = Gobo Selection using shortest (quickest) path. 6 - 10 = Gobo Selection using normal (longest) path. *11 - 20 = Reserved Values* 21 - 50 = Wheel Spin Forward (Fast to Slow) 51 - 60 = Wheel Spin STOP 61 - 90 = Wheel Spin Reverse (Slow to Fast) 91 - 120 = Gobo Shake Quickest Path (Slow to Fast) 121 - 150 = Gobo Shake Normal Path (Slow to Fast) 151 - 180 = Gobo Twist Quickest Path (Slow to Fast) 181 - 210 = Gobo Twist Normal Path (Slow to Fast) *211 - 255 = Reserved Values*
23	Rotating Gobo Wheel 2	0 - 255	0 - 100%	0	8-bit control of Rotating Gobo Wheel 2. ***See Channel 26 for control options.*** 0 - 5 = Open - No Gobo 6 - 10 = Gobo 1 (Circle of Eights) Index 11 - 15 = Gobo 2 (Punch Card) Index 16 - 20 = Gobo 3 (Vertical Bars) Index 21 - 25 = Gobo 4 (Lattice) Index 26 - 30 = Gobo 5 (Wavy Triangle) Index 31 - 35 = Gobo 6 (Dot Buffet) Index 36 - 40 = Gobo 7 (Quadcone Red) Index 41 - 45 = Open - No Gobo 46 - 50 = Gobo 1 (Circle of Eights) Rotate 51 - 55 = Gobo 2 (Punch Card) Rotate 56 - 60 = Gobo 3 (Vertical Bars) Rotate 61 - 65 = Gobo 4 (Lattice) Rotate 66 - 70 = Gobo 5 (Wavy Triangle) Rotate 71 - 75 = Gobo 6 (Dot Buffet) Rotate 76 - 80 = Gobo 7 (Quadcone Red) Rotate 81 - 85 = Open - No Gobo 86 - 90 = Gobo 1 (Circle of Eights) Rotate with Mega Stepping 91 - 95 = Gobo 2 (Punch Card) Rotate with Mega Stepping 96 - 10 = Gobo 3 (Vertical Bars) Rotate with Mega Stepping 101 - 105 = Gobo 4 (Lattice) Rotate with Mega Stepping 106 - 110 = Gobo 5 (Wavy Triangle) Rotate with Mega Stepping 111 - 115 = Gobo 6 (Dot Buffet) Rotate with Mega Stepping 116 - 120 = Gobo 7 (Quadcone Red) Rotate with Mega Stepping *121 - 255 = Reserved Values*
24	Rotating Gobo Wheel 2 Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Rotating Gobo Wheel 2 index and rotation. Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
25	Rotating Gobo Wheel 2 Index / Rotate - Low Byte				
26	Rotating Gobo Wheel 2 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options for Gobo Wheel 1 (Channel 23). 0 - 5 = Gobo Selection using shortest (quickest) path. 6 - 10 = Gobo Selection using normal (longest) path. *11 - 20 = Reserved Values* 21 - 50 = Wheel Spin Forward (Fast to Slow) 51 - 60 = Wheel Spin STOP 61 - 90 = Wheel Spin Reverse (Slow to Fast) 91 - 120 = Gobo Shake Quickest Path (Slow to Fast) 121 - 150 = Gobo Shake Normal Path (Slow to Fast) 151 - 180 = Gobo Twist Quickest Path (Slow to Fast) 181 - 210 = Gobo Twist Normal Path (Slow to Fast) *211 - 255 = Reserved Values*
27	Animation Wheel 1 *(Dichro*Fusion)*	0 - 255	0 - 100%	0	Controls Animation Wheel 1 linearly within the beam.

Table 3: VL4000 Spot Enhanced 16-Bit DMX Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
28	Animation Wheel 1 *(Dichro*Fusion)* Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Animation Wheel 1 index and rotation. Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
29	Animation Wheel 1 *(Dichro*Fusion)* Index / Rotate - Low Byte				
30	Animation Wheel 1 *(Dichro*Fusion)* Control	0 - 255	0 - 100%	0	Used as a control channel for Animation Wheel 1. 0 - 5 = Index using shortest (quickest) path. 6 - 10 = Index using normal (longest) path. 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping *21 - 25 = Reserved Values* 26 - 56 = Image Shake using shortest (quickest) path slow to fast. 57 - 87 = Image Shake using normal (longest) path slow to fast. *88 - 255 = Reserved Values*
31	Animation Wheel 2 *(Wicked Waves)*	0 - 255	0 - 100%	0	Controls Animation Wheel 2 linearly within the beam.
32	Animation Wheel 2 *(Wicked Waves)* Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Animation Wheel 2 index and rotation. Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
33	Animation Wheel 2 *(Wicked Waves)* Index / Rotate - Low Byte				
34	Animation Wheel 2 *(Wicked Waves)* Control	0 - 255	0 - 100%	0	Used as a control channel for Animation Wheel 2. 0 - 5 = Index using shortest (quickest) path. 6 - 10 = Index using normal (longest) path. 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping *21 - 25 = Reserved Values* 26 - 56 = Image Shake using shortest (quickest) path slow to fast. 57 - 87 = Image Shake using normal (longest) path slow to fast. *88 - 255 = Reserved Values*
35	Beam Iris	0 - 255	0 - 100%	0	Controls beam size iris from 0 (open) to 255 (full).
36	Shutter Frame 1A	0 - 255	0 - 100%	0	Controls Framing Shutter 1A from 0 (open) to 255 (full).
37	Shutter Frame 1B	0 - 255	0 - 100%	0	Controls Framing Shutter 1B from 0 (open) to 255 (full).
38	Shutter Frame 2A	0 - 255	0 - 100%	0	Controls Framing Shutter 2A from 0 (open) to 255 (full).
39	Shutter Frame 2B	0 - 255	0 - 100%	0	Controls Framing Shutter 2B from 0 (open) to 255 (full).
40	Shutter Frame 3A	0 - 255	0 - 100%	0	Controls Framing Shutter 3A from 0 (open) to 255 (full).
41	Shutter Frame 3B	0 - 255	0 - 100%	0	Controls Framing Shutter 3B from 0 (open) to 255 (full).
42	Shutter Frame 4A	0 - 255	0 - 100%	0	Controls Framing Shutter 4A from 0 (open) to 255 (full).
43	Shutter Frame 4B	0 - 255	0 - 100%	0	Controls Framing Shutter 4B from 0 (open) to 255 (full).
44	Shutter Frame Rotate	0 - 255	0 - 100%	128	Controls Framing Shutter mechanism from +/- 50°
45	Prism	0 - 255	0 - 100%	0	Controls prism mechanism. 0- 5 = Open 6 - 10 = Index 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping *21 - 255 = Reserved Values*
46	Prism Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of prism index or rotation and index. Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
47	Prism Index / Rotate - Low Byte				

Table 3: VL4000 Spot Enhanced 16-Bit DMX Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
48	Prism Diverge	0 - 255	0 - 100%	0	Controls spread of prism image from small (DMX 0) to wide (DMX 255). Note : there are some diverge positions that will not be available due to various lensing positions.
49	Frost	0 - 255	0 - 100%	0	Controls frost mechanism. Linear control from No Frost (DMX 0) to Full Frost (DMX 255).
50	Strobe Speed	0 - 255	0 - 100%	0	Controls strobe rate from slowest (DMX 0) to fastest (DMX 255)
51	Strobe Control	0 - 255	0 - 100%	0	Control Channel for strobing functions. 0 - 5 = Open 6 - 10 = Closed 11 - 15 = Normal Strobe 16 - 20 = Random Strobe 21 - 25 = Random Sync *26 - 255 = Reserved Values*
52	Focus Timing	0 - 255	0 - 100%	255	Allows for luminaire timing of pan and tilt mechanisms. Profile should default to DMX 255 for smoothest console timing.
53	Optics Timing	0 - 255	0 - 100%	255	Adjustment of fixture timing to control lensing mechanisms. Profile should default to DMX 255 for smoothest console timing.
54	Color Timing	0 - 255	0 - 100%	255	Allows for luminaire timing to control color mechanisms. Profile should default to DMX 255 for smoothest console timing.
55	Beam Timing	0 - 255	0 - 100%	255	Allows for luminaire timing to control beam shaping mechanisms. Profile should default to DMX 255 for smoothest console timing.
56	Gobo Timing	0 - 255	0 - 100%	255	Allows for luminaire timing to control gobo mechanisms. Profile should default to DMX 255 for smoothest console timing.
57	Control	0 - 255	0 - 100%	0	To execute a command, the control channel must be set to idle (DMX 0) then changed to a particular value and held for 3 seconds then restored to DMX 0. Upon completion of this routine, the desired command will be executed by the luminaire. Used to strike/douse the lamp, set lamp levels, and other various functions, as well as resetting the luminaire via the console. DMX values are: 0 - 5 = Idle (Default) 6 - 10 = Full Luminaire ReCal *(1)* *(1) This command is also used to Wake fixture up from shutdown* 11 - 15 = Lamp ON 16 - 20 = Lamp OFF 21 - 25 = Fixture Shutdown 26 - 30 = Display - Menu ON 31 - 35 = Display - Menu OFF 36 - 40 = ReCal Position 41 - 45 = ReCal Color 46 - 50 = ReCal Gobo 51 - 55 = ReCal Beam 56 - 60 = ReCal Optics 61 - 65 = ReCal Dimmer/Strobe 66 - 70 = Reset Fixture to Defaults 71 - 75 = Full Luminaire Reboot *(2)* *(2) This command will douse lamp and reset all processors in fixture, then ReCal all parameters.* 76 - 80 = Fixture Status On/Off *(3)* *(3) This command will enable the display to show fixture status for 5 min. After this time, displays will return to default configuration. Repeating this command in less than 5 minutes will behave as a toggle.* 81 - 85 = Standard Mode - Fixture operates at maximum output (Default) 86 - 90 = Studio Mode - Reduced output with lower fan settings *91 - 255 = Reserved Values*

Notes:

Default Values: *Denotes recommended console default settings.

16-Bit Channel Mapping

Table 4 provides DMX channel mapping of the DMX512 control values when the VL4000 Spot Luminaire is in 16-Bit DMX mode (as set by the luminaire's menu system).

Table 4: VL4000 Spot 16-Bit Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
1	Intensity	0 (closed) - 255 (open)	0 - 100%	0	Linear Intensity control from 0 (closed) to 255 (open).
2	Pan High Byte	0 - 65535	0 - 100%	32767	16-bit linear control of pan from 0° to 520°.
3	Pan Low Byte				
4	Tilt High Byte	0 - 65535	0 - 100%	32767	16-bit linear control of tilt from 0° to 270°.
5	Tilt Low Byte				
6	Edge High Byte	0 - 65535	0 - 100%	0	16-bit linear control of edge functions.
7	Edge Low Byte				
8	Zoom High Byte	0 - 65535	0 - 100%	0	16-bit linear control of fixture zoom range between 0 (9 degrees) to 65535 (47 Degrees).
9	Zoom Low Byte				
10	Programming Control	0 - 255	0 - 100%	0	Used as a control channel for different programmable settings. Control Set discreet value of desired effect, wait >3 seconds, then set value to 0 (Idle). 0 - 2 = Idle *3 - 10 = Reserved Values* 11 - 15 = Dimmer Snap OFF 16 - 20 = Dimmer Snap ON (Fixture Default)
11	Cyan	0 - 255	0 - 100%	0	Controls Cyan color mechanism.
12	Yellow	0 - 255	0 - 100%	0	Controls Yellow color mechanism.
13	Magenta	0 - 255	0 - 100%	0	Controls Magenta color mechanism.
14	CTO	0 - 255	0 - 100%	0	Controls CTO mechanism.
15	Fixed Color Wheel 1	0 - 255	0 - 100%	0	8-bit control of Color Wheel 1. ***See Channel 16 for options.*** 0 - 23 = OPEN 24 - 69 = RED (Center at DMX 46) 70 - 116 = DARK FUCHSIA (Center at DMX 93) 117 - 162 = ORANGE (Center at DMX 139) 163 - 209 = KELLY GREEN (Center at DMX 186) 210 - 255 = CONGO BLUE (Center at DMX 232)
16	Fixed Color Wheel 1 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options of Color Wheel 1. 0 - 5 = Linear Movement using shortest (quickest) path. 6 - 10 = Linear Movement using normal (longest) path. 11 - 15 = Wheel Spin Forward (Fast to Slow) 16 - 20 = Wheel Spin STOP 21 - 25 = Wheel Spin Reverse (Slow to Fast) 26 - 56 = Color Shake Quickest Path (Slow to Fast) 57 - 87 = Color Shake Normal Path (Slow to Fast) *88 - 255 = Reserved Values*
17	Fixed Color Wheel 2	0 - 255	0 - 100%	0	8-bit control of Color Wheel 2. ***See Channel 18 for options.*** 0 - 23 = OPEN 24 - 69 = BLUE (Center at DMX 46) 70 - 116 = GREEN (Center at DMX 93) 117 - 162 = MINUS GREEN (Center at DMX 139) 163 - 209 = LAVENDER (Center at DMX 186) 210 - 255 = AMBER (Center at DMX 232)

Table 4: VL4000 Spot 16-Bit Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
18	Fixed Color Wheel 2 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options of Color Wheel 2. 0 - 5 = Linear Movement using shortest (quickest) path. 6 - 10 = Linear Movement using normal (longest) path. 11 - 15 = Wheel Spin Forward (Fast to Slow) 16 - 20 = Wheel Spin STOP 21 - 25 = Wheel Spin Reverse (Slow to Fast) 26 - 56 = Color Shake Quickest Path (Slow to Fast) 57 - 87 = Color Shake Normal Path (Slow to Fast) *88 - 255 = Reserved Values*
19	Rotating Gobo Wheel 1	0 - 255	0 - 100%	0	8-bit control of Rotating Gobo Wheel 1. ***See Channel 22 for control options.*** 0 - 5 = Open - No Gobo 6 - 10 = Gobo 1 (Alpha Waves) Index 11 - 15 = Gobo 2 (Leafy Breakup) Index 16 - 20 = Gobo 3 (Neurons V2) Index 21 - 25 = Gobo 4 (Night Sky) Index 26 - 30 = Gobo 5 (Bricked Out) Index 31 - 35 = Gobo 6 (On the Rocks) Index 36 - 40 = Gobo 7 (Droplets) Index 41 - 45 = Open - No Gobo 46 - 50 = Gobo 1 (Alpha Waves) Rotate 51 - 55 = Gobo 2 (Leafy Breakup) Rotate 56 - 60 = Gobo 3 (Neurons V2) Rotate 61 - 65 = Gobo 4 (Night Sky) Rotate 66 - 70 = Gobo 5 (Bricked Out) Rotate 71 - 75 = Gobo 6 (On the Rocks) Rotate 76 - 80 = Gobo 7 (Droplets) Rotate 81 - 85 = Open - No Gobo 86 - 90 = Gobo 1 (Alpha Waves) Rotate with Mega Stepping 91 - 95 = Gobo 2 (Leafy Breakup) Rotate with Mega Stepping 96 - 10 = Gobo 3 (Neurons V2) Rotate with Mega Stepping 101 - 105 = Gobo 4 (Night Sky) Rotate with Mega Stepping 106 - 110 = Gobo 5 (Bricked Out) Rotate with Mega Stepping 111 - 115 = Gobo 6 (On the Rocks) Rotate with Mega Stepping 116 - 120 = Gobo 7 (Droplets) Rotate with Mega Stepping *121 - 255 = Reserved Values*
20	Rotating Gobo Wheel 1 Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Rotating Gobo Wheel 1 index and rotation. Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
21	Rotating Gobo Wheel 1 Index / Rotate - Low Byte				
22	Rotating Gobo Wheel 1 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options for Rotating Gobo Wheel 1 (Channel 19). 0 - 5 = Gobo Selection using shortest (quickest) path. 6 - 10 = Gobo Selection using normal (longest) path. *11 - 20 = Reserved Values* 21 - 50 = Wheel Spin Forward (Fast to Slow) 51 - 60 = Wheel Spin STOP 61 - 90 = Wheel Spin Reverse (Slow to Fast) 91 - 120 = Gobo Shake Quickest Path (Slow to Fast) 121 - 150 = Gobo Shake Normal Path (Slow to Fast) 151 - 180 = Gobo Twist Quickest Path (Slow to Fast) 181 - 210 = Gobo Twist Normal Path (Slow to Fast) *211 - 255 = Reserved Values*

Table 4: VL4000 Spot 16-Bit Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
23	Rotating Gobo Wheel 2	0 - 255	0 - 100%	0	8-bit control of Rotating Gobo Wheel 2. ***See Channel 26 for control options.*** 0 - 5 = Open - No Gobo 6 - 10 = Gobo 1 (Circle of Eights) Index 11 - 15 = Gobo 2 (Punch Card) Index 16 - 20 = Gobo 3 (Vertical Bars) Index 21 - 25 = Gobo 4 (Lattice) Index 26 - 30 = Gobo 5 (Wavy Triangle) Index 31 - 35 = Gobo 6 (Dot Buffet) Index 36 - 40 = Gobo 7 (Quadcone Red) Index 41 - 45 = Open - No Gobo 46 - 50 = Gobo 1 (Circle of Eights) Rotate 51 - 55 = Gobo 2 (Punch Card) Rotate 56 - 60 = Gobo 3 (Vertical Bars) Rotate 61 - 65 = Gobo 4 (Lattice) Rotate 66 - 70 = Gobo 5 (Wavy Triangle) Rotate 71 - 75 = Gobo 6 (Dot Buffet) Rotate 76 - 80 = Gobo 7 (Quadcone Red) Rotate 81 - 85 = Open - No Gobo 86 - 90 = Gobo 1 (Circle of Eights) Rotate with Mega Stepping 91 - 95 = Gobo 2 (Punch Card) Rotate with Mega Stepping 96 - 10 = Gobo 3 (Vertical Bars) Rotate with Mega Stepping 101 - 105 = Gobo 4 (Lattice) Rotate with Mega Stepping 106 - 110 = Gobo 5 (Wavy Triangle) Rotate with Mega Stepping 111 - 115 = Gobo 6 (Dot Buffet) Rotate with Mega Stepping 116 - 120 = Gobo 7 (Quadcone Red) Rotate with Mega Stepping *121 - 255 = Reserved Values*
24	Rotating Gobo Wheel 2 Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Rotating Gobo Wheel 2 index and rotation. Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
25	Rotating Gobo Wheel 2 Index / Rotate - Low Byte				
26	Rotating Gobo Wheel 2 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options for Rotating Gobo Wheel 2 (Channel 24). 0 - 5 = Gobo Selection using shortest (quickest) path. 6 - 10 = Gobo Selection using normal (longest) path. *11 - 20 = Reserved Values* 21 - 50 = Wheel Spin Forward (Fast to Slow) 51 - 60 = Wheel Spin STOP 61 - 90 = Wheel Spin Reverse (Slow to Fast) 91 - 120 = Gobo Shake Quickest Path (Slow to Fast) 121 - 150 = Gobo Shake Normal Path (Slow to Fast) 151 - 180 = Gobo Twist Quickest Path (Slow to Fast) 181 - 210 = Gobo Twist Normal Path (Slow to Fast) *211 - 255 = Reserved Values*
27	Animation Wheel 1 *(Dichro*Fusion)*	0 - 255	0 - 100%	0	Controls Animation Wheel 1 linearly within the beam.
28	Animation Wheel 1 *(Dichro*Fusion)* Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Animation Wheel 1 index and rotation. Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
29	Animation Wheel 1 *(Dichro*Fusion)* Index / Rotate - Low Byte				

Table 4: VL4000 Spot 16-Bit Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
30	Animation Wheel 1 *(Dichro*Fusion)* Control	0 - 255	0 - 100%	0	Used as a control channel for Animation Wheel 1. 0 - 5 = Index using shortest (quickest) path. 6 - 10 = Index using normal (longest) path. 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping *21 - 25 = Reserved Values* 26 - 56 = Image Shake using shortest (quickest) path slow to fast. 57 - 87 = Image Shake using normal (longest) path slow to fast. *88 - 255 = Reserved Values*
31	Animation Wheel 2 *(Wicked Waves)*	0 - 255	0 - 100%	0	Controls Animation Wheel 2 linearly within the beam.
32	Animation Wheel 2 *(Wicked Waves)* Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Animation Wheel 2 index and rotation. Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
33	Animation Wheel 2 *(Wicked Waves)* Index / Rotate - Low Byte				
34	Animation Wheel 2 *(Wicked Waves)* Control	0 - 255	0 - 100%	0	Used as a control channel for Animation Wheel 2. 0 - 5 = Index using shortest (quickest) path. 6 - 10 = Index using normal (longest) path. 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping *21 - 25 = Reserved Values* 26 - 56 = Image Shake using shortest (quickest) path slow to fast. 57 - 87 = Image Shake using normal (longest) path slow to fast. *88 - 255 = Reserved Values*
35	Beam Iris	0 - 255	0 - 100%	0	Controls beam size iris from 0 (open) to 255 (full).
36	Shutter Frame 1A	0 - 255	0 - 100%	0	Controls Framing Shutter 1A from 0 (open) to 255 (full).
37	Shutter Frame 1B	0 - 255	0 - 100%	0	Controls Framing Shutter 1B from 0 (open) to 255 (full).
38	Shutter Frame 2A	0 - 255	0 - 100%	0	Controls Framing Shutter 2A from 0 (open) to 255 (full).
39	Shutter Frame 2B	0 - 255	0 - 100%	0	Controls Framing Shutter 2B from 0 (open) to 255 (full).
40	Shutter Frame 3A	0 - 255	0 - 100%	0	Controls Framing Shutter 3A from 0 (open) to 255 (full).
41	Shutter Frame 3B	0 - 255	0 - 100%	0	Controls Framing Shutter 3B from 0 (open) to 255 (full).
42	Shutter Frame 4A	0 - 255	0 - 100%	0	Controls Framing Shutter 4A from 0 (open) to 255 (full).
43	Shutter Frame 4B	0 - 255	0 - 100%	0	Controls Framing Shutter 4B from 0 (open) to 255 (full).
44	Shutter Frame Rotate	0 - 255	0 - 100%	128	Controls Framing Shutter mechanism from +/- 50°
45	Prism	0 - 255	0 - 100%	0	Controls prism mechanism. 0- 5 = Open 6 - 10 = Index 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping *21 - 255 = Reserved Values*
46	Prism Index/Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of prism index or rotation. Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
47	Prism Index/Rotate - Low Byte				
48	Prism Diverge	0 - 255	0 - 100%	0	Controls spread of prism image from small (DMX 0) to wide (DMX 255). Note : there are some diverge positions that will not be available due to various lensing positions.
49	Frost	0 - 255	0 - 100%	0	Controls frost mechanism. Linear control from No Frost (DMX 0) to Full Frost (DMX 255).
50	Strobe Speed	0 - 255	0 - 100%	0	Controls strobe rate from slowest (DMX 0) to fastest (DMX 255)

Table 4: VL4000 Spot 16-Bit Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
51	Strobe Control	0 - 255	0 - 100%	0	Control Channel for strobing functions. 0 - 5 = Open 6 - 10 = Closed 11 - 15 = Normal Strobe 16 - 20 = Random Strobe 21 - 25 = Random Sync *26 - 255 = Reserved Values*
52	Control	0 - 255	0 - 100%	0	To execute a command, the control channel must be set to idle (DMX 0) then changed to a particular value and held for 3 seconds then restored to DMX 0. Upon completion of this routine, the desired command will be executed by the luminaire. Used to strike/douse the lamp, set lamp levels, and other various functions, as well as resetting the luminaire via the console. DMX values are: 0 - 5 = Idle (Default) 6 - 10 = Full Luminaire ReCal *(1)* *(1) This command is also used to Wake fixture up from shutdown* 11 - 15 = Lamp ON 16 - 20 = Lamp OFF 21 - 25 = Fixture Shutdown 26 - 30 = Display - Menu ON 31 - 35 = Display - Menu OFF 36 - 40 = ReCal Position 41 - 45 = ReCal Color 46 - 50 = ReCal Gobo 51 - 55 = ReCal Beam 56 - 60 = ReCal Optics 61 - 65 = ReCal Dimmer/Strobe 66 - 70 = Reset Fixture to Defaults 71 - 75 = Full Luminaire Reboot *(2)* *(2) This command will douse lamp and reset all processors in fixture, then ReCal all parameters.* 76 - 80 = Fixture Status On/Off *(3)* *(3) This command will enable the display to show fixture status for 5 min. After this time, displays will return to default configuration. Repeating this command in less than 5 minutes will behave as a toggle.* 81 - 85 = Standard Mode - Fixture operates at maximum output (Default) 86 - 90 = Studio Mode - Reduced output with lower fan settings *91 - 255 = Reserved Values*

Notes:

Default Values: *Denotes recommended console default settings.

Luminaire Timing

Luminaire Timing Channel Information

Timing channel control improves the timed moves of certain groups of parameters. Four timing channels are provided, one for Pan and Tilt, one for color parameters, one for beam parameters and one for gobo/index parameters. Timing channels support time values of up to six minutes.

Table 5: Channel Function / Timing Channel Relationship

Channel Function	Timing Channel				
	Focus Time	Color Time	Beam Time	Gobo Time	Optics Time
Pan (Hi Byte/Lo Byte)	♦				
Tilt (Hi Byte/Lo Byte)	♦				
Color		♦			
Iris			♦		
Framing Shutters			♦		
Rotating Gobos				♦	
Index				♦	
Animation Wheels				♦	
Zoom					♦
Edge					♦
Frost					♦
Prism					♦

Types of timing control:

- Timing Control Channel: the luminaire uses its timing channel value to calculate a smooth continuous movement for a given time and transition.

- Console Timing: the console calculates the time duration between the DMX increments to be sent for a given time and transition.

Guidelines:

- Timing channels support time values of up to six minutes.

- To use a timing channel instead of console timing, it is necessary to set the timing channel to the desired value and set cue and/or parameter time to zero. A combination of time controls can produce unexpected results.

- The default value setting in the profile should be 255 (proportional control) to allow smooth movement when using console timing.

- The VL4000 Spot Luminaire utilizes an intuitive timing system when the timing channels are set to 255. When quick DMX changes are detected the luminaire will operate as fast as possible and with slower DMX changes the luminaire will operate as smooth as possible.

- The timing channel data should change as a snap. A zero value will give the fastest move, however, without any smoothing this can appear "steppy" in console timed moves.

Note: Some parameters have been excluded from the timing channels. Wheel spin and gobo rotation rate changes are not affected by timing channels.

To use luminaire timing channels, you must:

Step   1. Create the cue, including color, beam, gobo and position as required.

Step   2. Decide which fixtures and which parameter groups will use timing channels.

Step   3. Assign a value to the particular timing channel(s) you wish to use (for timing information see chart on next page).

Step   4. Set console timing for the luminaire's parameters and timing channels to zero seconds.

Step   5. Store cue.

Note: Avoid changing timing channel values in a fading cue. This can cause unexpected behavior in the luminaire as the timing channel value is updated over time. Timing channel values and the final destination of the parameters affected by the timing channel should always be sent in a zero count.

Timing channels can be set in either % or 0-255 (DMX) modes, with the following values assigned:

Table 6: Timing Channels Map

DMX	% Value	= Seconds
0		Full Speed
1		0.2
2		0.4
3	1	0.6
4		0.8
5	2	1
6		1.2
7		1.4
8	3	1.6
9		1.8
10	4	2
11		2.2
12		2.4
13	5	2.6
14		2.8
15	6	3
16		3.2
17		3.4
18	7	3.6
19		3.8
20	8	4
21		4.2
22		4.4

Table 6: Timing Channels Map (Continued)

DMX	% Value	= Seconds
23	9	4.6
24		4.8
25	10	5
26		5.2
27		5.4
28	11	5.6
29		5.8
30		6
31	12	6.2
32		6.4
33	13	6.6
34		6.8
35		7.0
36	14	7.2
37		7.4
38	15	7.6
39		7.8
40		8
41	16	8.2
42		8.4
43	17	8.6
44		8.8
45		9
46	18	9.2
47		9.4
48	19	9.6
49		9.8
50		10
51	20	10.2
52		10.4
53		10.6
54	21	11
55		11
56	22	12
57		12
58		13
59	23	13
60		14
61	24	14

Table 6: Timing Channels Map (Continued)

DMX	% Value	= Seconds
62		14
63		15
64	25	15
65		16
66	26	16
67		16
68		17
69	27	17
70		18
71	28	18
72		18
73		19
74	29	19
75		20
76	30	20
77		20
78		21
79	31	21
80		21
81		22
82	32	22
83		23
84	33	23
85		23
86		24
87	34	24
88		25
89	35	25
90		25
91		26
92	36	26
93		27
94	37	27
95		27
96		28
97	38	28
98		29
99	39	29
100		29
101		30
102	40	30
103		30

Table 6: Timing Channels Map (Continued)

DMX	% Value	= Seconds
104		31
105	41	31
106		32
107	42	32
108		32
109		33
110	43	33
111		34
112	44	34
113		34
114		35
115	45	35
116		36
117	46	36
118		36
119		37
120	47	37
121		38
122	48	38
123		38
124		39
125	49	39
126		39
127		40
128	50	40
129		41
130	51	41
131		41
132		42
133	52	42
134		43
135	53	43
136		43
137		44
138	54	44
139		45
140	55	45
141		45
142		46
143	56	46
144		47
145	57	47

Table 6: Timing Channels Map (Continued)

DMX	% Value	= Seconds
146		47
147		48
148	58	48
149		49
150	59	49
151		49
152		50
153	60	50
154		50
155		51
156	61	51
157		52
158	62	52
159		52
160		53
161	63	53
162		54
163	64	54
164		54
165		55
166	65	55
167		56
168	66	56
169		56
170		57
171	67	57
172		58
173	68	58
174		58
175		59
176	69	59
177		59
178		60
179	70	60
180		65
181	71	65
182		65
183		70
184	72	70
185		75
186	73	75
187		75

Table 6: Timing Channels Map (Continued)

DMX	% Value	= Seconds
188		80
189	74	80
190		85
191	75	85
192		85
193		90
194	76	90
195		95
196	77	95
197		95
198		100
199	78	100
200		110
201	79	110
202		110
203		120
204	80	120
205		120
206	81	130
207		130
208		140
209	82	140
210		140
211		150
212	83	150
213		160
214	84	160
215		160
216		170
217	85	170
218		180
219	86	180
220		180
221		190
222	87	190
223		200
224	88	200
225		200
226		210
227	89	210
228		210
229		220

Table 6: Timing Channels Map (Continued)

DMX	% Value	= Seconds
230	90	220
231		230
232	91	230
233		230
234		240
235	92	240
236		250
237	93	250
238		250
239		260
240	94	260
241		270
242	95	270
243		270
244		280
245	96	280
246		290
247	97	290
248		290
249		300
250	98	300
251		310
252	99	310
253		310
254		310
255	100	Follows Cue Data

Updating Software

PEGASUS Software

Application

With the USB Upload Cable (part number **PEGASUS**, sold separately) and the PEGASUS Software (downloaded from our web site), you can connect any USB 2.0 compatible port on a computer to a chain of up to 32 Philips Entertainment luminaires in order to update the luminaire software.
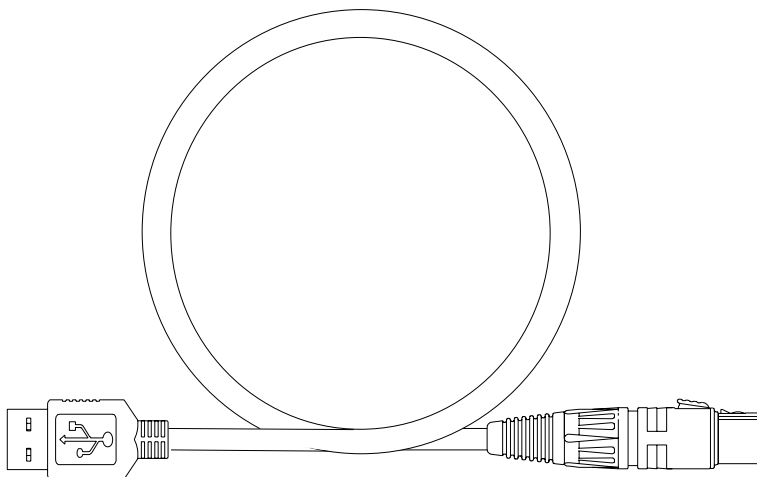
Figure 3-7: USB Upload Cable *(sold separately)*

Note: PEGASUS Software is compatible with previous versions of the VARI✳LITE USB Upload Cable (25.9600.0001).

Computer Requirements

• PC running Windows. Although the programming kit software is not directly compatible with Macintosh computers, it does run with some Windows emulators.

• An available USB 2.0 compatible port on your computer.

• Internet access the Vari-Lite web site (www.vari-lite.com) to download the PEGASUS Software.

Note: Internet access is only required to download the PEGASUS Software and product firmware files. Internet access is not required to use the program.

Installing PEGASUS Software

To install the PEGASUS Software:

Step   1. Visit the Vari-Lite web site (as described in "Computer Requirements") and download PEGASUS Software ZIP File.

Step   2. Unzip file to a folder on your computer.

Step   3. Double click on pegausinstall.msi icon.

Step   4. Follow all prompts in program's installation wizard.

Step   5. Insert USB Upload Cable *(sold separately)* into a USB 2.0 compatible port on your computer.

⚠ **WARNING:** Do not use a USB hub, always connect directly to a USB port on your computer.

Step   6. When prompted by Windows for upload cable USB driver, use browser window to point to "USB Driver" folder that came with PEGASUS Software and press OK.

Step   7. After USB cable is ready to use, proceed to next step.

Note: Refer to ""Upload Cable LED Status Messages" " about the three-color LED on the XLR end of the cable.

Troubleshooting

Upload Cable LED Status Messages

Table 7: USB Upload Connector LED Colors

XLR LED Status	Meaning
Continuous **Red**	Do not use the cable to download software; contact customer service for assistance.
Continuous **Purple**	Driver software is not installed.
Continuous **Blue** with **Purple** pulse every five seconds.	Cable is ready, but data is not being transmitted.
Flashing **Blue** (twice per second)	Data is being transmitted.
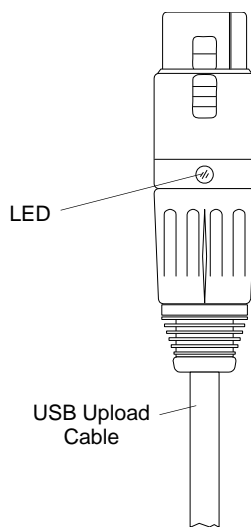
Figure 3-8: USB Upload Cable

Upload Cable Warning (Error) Message

If you see a warning message (as shown in Figure 3-9) on your computer screen and the USB Upload Cable is properly connected to USB 2.0 compatible port on your computer, it may not be detected by your computer.

*   Disconnect USB Upload Cable from computer and reconnect.

*   Reinstall USB Upload Cable Driver as described in, ""Installing PEGASUS Software" ".

If either of the these do not resolve the error message, you may have a defective Upload Cable. Contact customer service at 1.214.647.7880 or entertainment.service@philips.com for assistance.

Figure 3-9: Upload Cable Error Message

Installing or Updating Luminaire Firmware

When luminaires are data linked together, you can program up to 32 luminaires at the same time; refer to "Connecting Data and Power" on page 23. To program more than 32 luminaires (or devices), program them in batches of 32 or less.

⚠️ ## Important Notes & Warnings:

*   *DMX Data must be disconnected before uploading software to luminaires. Do not merge firmware files with DMX signals.*

*   *You can upload multiple firmware files to a variety of luminaires that are data linked together. Each model of Philips Entertainment luminaire recognizes its own software and only downloads the appropriate file.*

*   *Do not use a USB hub, always connect directly to a USB port on your computer.*

Updating VARI∗LITE Luminaires

To install or update luminaire firmware:

⚠️ **Note:** DMX Data must be disconnected before uploading software to luminaires. Do not merge firmware files with DMX signals.

Step 1. Visit Vari-Lite web site (www.vari-lite.com) and download product firmware you wish to update.

Step 2. Unzip firmware file you downloaded to a folder on your computer.

Step 3. Insert USB Upload Cable *(sold separately)* into a USB 2.0 compatible port on your computer *(do not use a USB hub)*.

Step 4. Double click on PEGASUS Software shortcut on your desktop.

Step 5. When application opens:

      a.   Select Vari-Lite for luminaire type (as shown in Figure 3-10.).
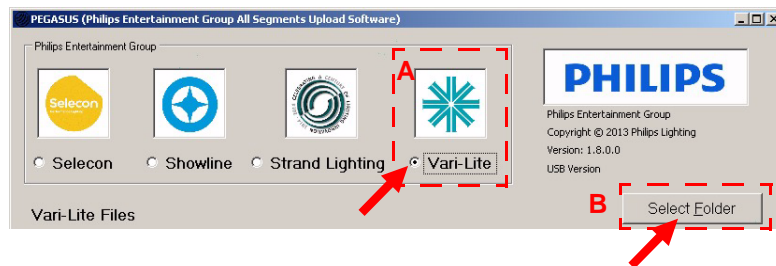
Figure 3-10: PEGASUS Software Selection Screen

      b.   As indicated in Figure 3-10, click on Select Folder button to open browser window.

Step   6. In browser window, navigate to folder where Vari-Lite firmware was extracted.

      a.   Click on any file in folder.

      b.   Click Open button on bottom of screen.

Step   7. Click on bin file for luminaire to be updated (for example, SVL_080812.bin) as highlighted in Figure 3-11.
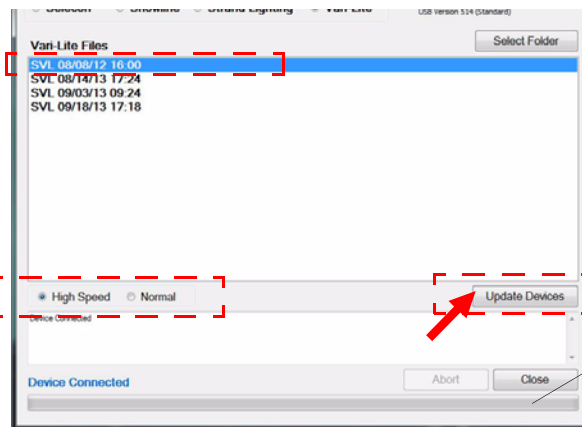
Figure 3-11: bin File Selection

Step   8. As indicated in Figure 3-11, click on Update Devices to start upload.

      a.   During upload, PEGASUS and luminaire screens will display a progress bar showing upload status.

      b.   Once progress bar shows completed on computer screen, wait approximately one minute before moving to next step. *Note, The progress bar on luminaire LCD display may continue for a short time after computer progress bar shows completed.*

      c.   Once the firmware upload is complete, the VARI✳LITE luminaire(s) will automatically recalibrate.

Step   9. Close PEGASUS Software using Close button at bottom of program screen.

Note: You can confirm the software version in the luminaire menu.

Transferring Software From Luminaire to Luminaire

It is possible to transfer specific software versions between luminaires. As in the case of installing new software versions, multiple luminaires can be programmed at the same time if they are data linked together (refer to "Connecting Data and Power" on page 23), however a maximum of 32 luminaires can be updated at once.

Hardware Requirements

Data cables used in this process must have two twisted pairs and a shield. It is also recommended that cables meet all other USITT DMX specification requirements. Refer to "Data Cables" on page 15.

A DMX termination connector is used in this process. Refer to page 16 for more information regarding the construction of this connector.
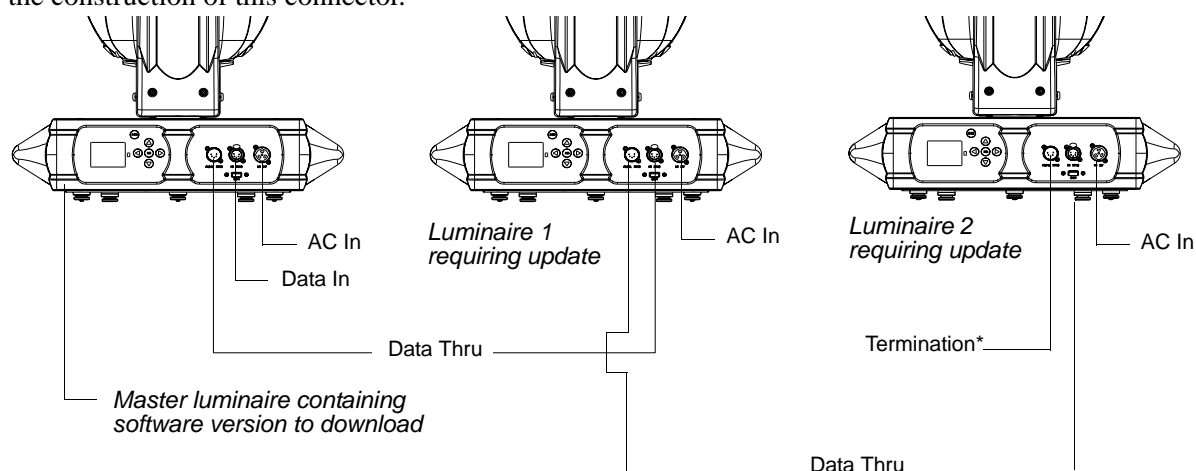
DMX terminator required for last fixture on DMX line.

Figure 3-12: Software Transfer Setup

Transfer Procedure

This procedure is used to transfer software versions between luminaires.

Step   1. At last luminaire, install DMX termination connector into DATA THRU XLR connector.

Step   2. At master luminaire (first in chain) Menu Display, press [ESC].

Step   3. Press [Up] / [Down] arrows until Fixture appears. Press [OK].

Step   4. Press [Up] / [Down] arrows until Crossload Software appears. Press [OK].

Step   5. OK? will be displayed. Press [OK] to accept.

Step   6. The status bar will show download progress.

Verify software version at luminaire:

Step   1. At Menu Display, press [ESC].

Step   2. Press [Up] / [Down] arrows until Fixture appears. Press [OK].

Step   3. Press [Up] / [Down] arrows until Version appears. Press [OK].

The first half of the version will be displayed as a date (MM/DD/YY). For example, 03/18/14 (March 18, 2014).

Press [Enter] to display second half of version. This will be displayed as a time (HH:MM). (For example, 16.36 = 4:36 pm).
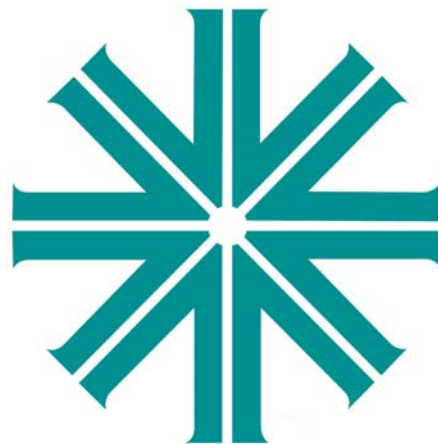
CHAPTER 4.

Menu System

This chapter contains instructions for operating the luminaire using the Menu Display feature.

- **Menu Operation**

- **Self Tests**

Menu Operation

LCD Display and Menu System

The VL4000 Spot Luminaire's LCD Display and Menu System provides local control for accessing the following fixture's settings:

- Address – to set the DMX address
- Setup – to change lamp modes (Standard or Studio)
- Configure – various parameter settings, set luminaire ID
- Fixture – fixture status, recalibrate, reboot, software version, view fixtures hours, etc.
- DMX – change the map (16-bit Enhanced or 16-bit), view DMX values, and swap/invert pan/tilt
- Service – password protected factory service menu
- Manual – manual control of parameters
- Test – test functions of parameters

The menu system is controlled at the Menu Display available at the enclosure input panel. If there are multiple luminaires in a system, any settings or changes would need to be made at each LCD Menu as desired.

Menu Controls

The menu system is controlled by an OK (Enter), ESC (Escape), and four Arrow ($\triangleleft \triangle \triangledown \triangleright$) buttons. These buttons function are shown in Figure 4-1.

Arrow Keys (Up/Down/Left/Right)
Menu Navigation / Data Selection

LCD Menu Proximity Sensor
Automatically enables the menu display (turn on the backlight) as you reach for the front panel.

LCD Display
Displays all Data and Luminaire Settings

OK (Enter) Button
To Select or Change a Setting or Data Value

ESC (Escape)
Used to Access Main Menu Parameters, Exit, or Return to Previous Menu Item

Figure 4-1:   Menu Control

LCD Display and Menu System Operation

The LCD Display Menu system consists of several categories. Use the Menu Buttons to access and make changes to the menu items. When the desired menu item is reached, press the desired Menu Button to display the menu options and to navigate and configure the menu options as required.

To navigate and access menu settings/selections:

Step 1. Make sure unit is powered and turned on.

Step 2. Press [ESC] to access menu categories.

Step 3. Use four Arrow ($\triangleleft \triangle \triangledown \triangleright$) buttons to navigate through the various options and settings.

Step 4. Once menu item is reached, press [OK] to access the menu item parameters.

Step 5. Make changes to parameters as desired.

Step 6. Press OK [Enter] button to accept changes.

DMX Address

To set, edit, and save a DMX address:

Step 1. Press [ESC].

Step 2. Press [Up] / [Down] arrows until `Address` appears. Press [OK].

Step 3. Use [Left] and [Right] arrow buttons to scroll through all digits.

Step 4. Once at desired digit, use [Up] and [Down] arrows to change highlighted digit.

Step 5. Once digit is set, use [Left] and [Right] arrow buttons to set other digits in DMX address.

Step 6. Once all digits are set in DMX address, press [OK] to set.

Step 7. DMX address will display and is saved.

Operational Modes - Standard and Studio

The VL4000 Spot Luminaire offers users the choice of two operational modes that are selectable through the luminaire's menu system:

- **Standard Mode** *(default)* - luminaire's cooling fans are set to maximum cooling to allow the luminaire to output up to 33,000 lumens. In Standard Mode, the fixture can operate in environments up to 104º F / 40º C.

- **Studio Mode** - luminaire's cooling fans are slowed to afford quieter operation where noise could be a concern. The lumen output of the fixture is reduced to minimize the heat produced by the luminaire's lamp. In Studio Mode, the fixture can operate in environments up to 122º F / 50º C.

Note: The operational mode can be changed at any time during use via the control channel. This allows the unit to be put in Studio mode only for particular instances or scenes within during its use.

Other LCD Display Features

LCD Menu Battery Operation

The LCD menu system utilizes a battery powered system for operation when the luminaire is not connected to power. The primary purpose of this mode is to allow basic setup and configuration of the luminaire.

To enable the battery operation of the menu system:

Step   1. Press and hold [ESC] and [OK] for two seconds.

Step   2. Once enabled, the menu will function as normal.

Note: Any commands that require full power (calibrate, lamp strike, etc.) will be ignored while the menu system is in battery operation mode.

Step   3. To exit battery mode, press and hold [ESC] and [OK] for two seconds. *Note, luminaire will automatically exit this mode after one minute of inactivity.*

Status Bar

The Status Bar (as illustrated in Figure 4-2) is present at all times and displays luminaire operational information of the luminaire. The Status Bar contains the following information:

Figure 4-2: LCD Display Status Bar

- LAMP – indicates current lamp state - ON or OFF.
- ERRORS – Displays a number indicating the total amount of current errors. When errors are present, messages will appear in Red text. When no errors are present, NO will display.
- MAP – Displays the current DMX map setting.
- ADDR – Displays the current DMX address for the fixture. NOTE, when the fixture does not detect a DMX input signal, the DMX address text will display in Red text.

LCD Menu Proximity Sensor

The LCD menu system uses a proximity sensor to automatically enable the menu display (turn on the backlight) as you reach for the front panel. If the display is off, it will turn on when your hand is within a few inches of the display. *Note, when the luminaire is not connected to power and the LCD menu is operating on battery, this proximity sensor is disabled.*

Menu Tree

Figure 4-3 and Figure 4-4 on page 62 are graphical representations of the menu system.

Address - value (1 thru 512)

Setup —— Model ┬ Standard
└ Studio

Configure ┬ Lamp ┬ Power ┬ On*
│ │ └ Off
│ ├ Power Up ┬ Lamp Off*
│ │ ├ Lamp On
│ │ └ Cal On
│ ├ Lamp Hours —— # of hours
│ └ Reset Lamp Hours —— Are you sure?
├ Pan / Tilt — Movement ┬ Enable
│ └ Disable
├ Head Motors — Movement ┬ Enable
│ └ Disable
├ Display ┬ Orientation ┬ Auto
│ │ ├ Up
│ │ └ Down
│ └ On Time ┬ Auto
│ ├ 30 Sec
│ ├ 5 Min
│ ├ 10 Min
│ └ On
├ Reset Defaults — Are you sure?
└ Change Luminaire ID —— ######

Fixture ┬ Status — Fixture OK...*or displays a list of errors encountered during calibration process or operation.*
├ ReCalibrate Fixture —— Are you sure?
├ ReBoot Fixture*** —— Are you sure?
├ Luminaire ID — ######
├ Software Version — MM/DD/YY — HH:MM
├ Fixture Hours —— XXXXXX Hours
├ Crossload Software — Send
└ Download —— OK?
└ Sending Version XX/XX/XX XX:XX
└ Crossload Complete

Notes:

*Factory default setting.
**Channel and Dimmer information displayed simultaneously.
***Reboots entire fixture including processor.

DMX ┬ Data** ─ Ch 1 - Intensity XXX (Value)
│ Ch 2 - Pan High Byte XXX (Value)
│ Ch 3 - Pan Low Byte XXX (Value)
│ Ch 4 - Tilt High Byte XXX (Value)
│ Ch 5 - Tilt Low Byte XXX (Value)
│ Ch 6 - Edge High Byte XXX (Value)
│ Ch 7 - Edge Low Byte XXX (Value)
│ Ch 8 - Zoom High Byte XXX (Value)
│ Ch 9 - Zoom Low Byte XXX (Value)
│ Ch 10 - Programming Control XXX (Value)
│ Ch 11 - Cyan XXX (Value)
│ Ch 12 - Yellow XXX (Value)
│ Ch 13 - Magenta XXX (Value)
│ Ch 14 - CTO XXX (Value)
│ Ch 16 - Col Whl 1 XXX (Value)
│ Ch 17 - Col Whl 1 Ctrl XXX (Value)
│ Ch 18 - Col Whl 2 XXX (Value)
│ Ch 19 - Col Whl 2 Ctrl XXX (Value)
│ Ch 20 - Gobo Whl 1 XXX (Value)
│ Ch 21 - Gobo 1 Indx High XXX (Value)
│ Ch 22 - Gobo 1 Indx Low XXX (Value)
│ Ch 23 - Gobo 1 Ctrl XXX (Value)
│ Ch 24 - Gobo Whl 2 XXX (Value)
│ Ch 25 - Gobo 2 Indx High XXX (Value)
│ Ch 26 - Gobo 2 Indx Low XXX (Value)
│ Ch 27 - Gobo 2 Ctrl XXX (Value)
│ Ch 28 - Animation Whl 1 XXX (Value)
│ Ch 29 - Animation 1 Indx High XXX (Value)
│ Ch 30 - Animation 1 Indx Low XXX (Value)
│ Ch 31 - Animation 1 Ctrl XXX (Value)
│ Ch 32 - Animation Whl 2 XXX (Value)
│ Ch 33 - Animation 2 Indx High XXX (Value)
│ Ch 34 - Animation 2 Indx Low XXX (Value)
│ Ch 35 - Animation 2 Ctrl XXX (Value)
│ Ch 36 - Iris XXX (Value)
│ Ch 37 - Frame 1A XXX (Value)
│ Ch 38 - Frame 1B XXX (Value)
│ Ch 39 - Frame 2A XXX (Value)
│ Ch 40 - Frame 2B XXX (Value)
│ Ch 41 - Frame 3A XXX (Value)
│ Ch 42 - Frame 3B XXX (Value)
│ Ch 43 - Frame 4A XXX (Value)
│ Ch 44 - Frame 4B XXX (Value)
│ Ch 45 - Frame Rotate XXX (Value)
│ Ch 46 - Prism XXX (Value)
│ Ch 47 - Prism Indx High XXX (Value)
│ Ch 48 - Prism Indx Low XXX (Value)
│ Ch 49 - Prism Divergence XXX (Value)
│ Ch 50 - Frost XXX (Value)
│ Ch 52 - Strobe Speed XXX (Value)
│ Ch 53 - Strobe Ctrl XXX (Value)
│ Ch 54 - Focus Timing XXX (Value)
│ Ch 55 - Optic Timing XXX (Value)
│ Ch 56 - Color Timing XXX (Value)
│ Ch 57 - Beam Timing XXX (Value)
│ Ch 58 - Gobo Timing XXX (Value)
│ Ch 59 - Luminaire Ctrl XXX (Value)
└ Pan/Tilt ┬ Swap Pan/Tilt ┬ Off*
│ └ On
├ Invert Pan ┬ Off*
│ └ On
└ Invert Tilt ┬ Off*
└ On

- CONTINUED NEXT PAGE -

Figure 4-3: Menu Tree Part 1

Continued from previous page:

Manual
- Intensity ———————— Value 0 - 255
- Pan ———————— Value 0 - 65535
- Tilt ———————— Value 0 - 65535
- Edge ———————— Value 0 - 65535
- Zoom ———————— Value 0 - 65535
- Programming Control —— Value 0 - 255
- Cyan ———————— Value 0 - 255
- Yellow ———————— Value 0 - 255
- Magenta ———————— Value 0 - 255
- CTO ———————— Value 0 - 255
- Color Wheel 1 ———————— Value 0 - 255
- Col Wheel 1 Control —— Value 0 - 255
- Color Wheel 2 ———————— Value 0 - 255
- Col Wheel 2 Control —— Value 0 - 255
- Gobo Wheel 1 ———————— Value 0 - 255
- Gobo 1 Index/Rotate —— Value 0 - 65535
- Gobo 1 Control ———— Value 0 - 255
- Gobo Wheel 2 ———————— Value 0 - 255
- Gobo 2 Index/Rotate —— Value 0 - 65535
- Gobo 2 Control ———— Value 0 - 255
- Animation 1 ———————— Value 0 - 255
- Animation 1 Indx/Rot —— Value 0 - 65535
- Animation 1 Control —— Value 0 - 255
- Animation 2 ———————— Value 0 - 255
- Animation 2 Indx/Rot —— Value 0 - 65535
- Animation 2 Control —— Value 0 - 255
- Iris ———————— Value 0 - 255
- Frame 1A ———————— Value 0 - 255
- Frame 1B ———————— Value 0 - 255
- Frame 2A ———————— Value 0 - 255
- Frame 2B ———————— Value 0 - 255
- Frame 3A ———————— Value 0 - 255
- Frame 3B ———————— Value 0 - 255
- Frame 4A ———————— Value 0 - 255
- Frame 4B ———————— Value 0 - 255
- Frame Rotation ———— Value 0 - 255
- Prism ———————— Value 0 - 255
- Prism Indx/Rotate ———— Value 0 - 65535
- Prism Divergence —— Value 0 - 255
- Frost ———————— Value 0 - 255
- Strobe Speed ———————— Value 0 - 255
- Strobe Control ———————— Value 0 - 255

Note: Manual is disabled if DMX512 signal is present.

Test
- ALL Test ———————— Running 'ALL TEST'
- Pan/Tilt ———————— Running 'PAN/TILT TEST'
- Pan ———————— Running 'PAN TEST'
- Tilt ———————— Running 'TILT TEST'
- Dimmer ———————— Running 'DIMMER TEST'
- Strobe ———————— Running 'STROBE TEST'
- Color Mixing —— Running 'COLOR MIXING TEST'
- Cyan ———————— Running 'CYAN TEST'
- Yellow ———————— Running 'YELLOW TEST'
- Magenta ———————— Running 'MAGENTA TEST'
- CTO ———————— Running 'CTO TEST'
- Color Wheel 1 —— Running 'COL WHL 1 TEST'
- Color Wheel 2 —— Running 'COL WHL 2 TEST'
- Gobo 1 ———————— Running 'GOBO 1 TEST'
- Gobo 2 ———————— Running 'GOBO 2 TEST'
- Animation 1 ———— Running 'ANIMATION 1 TEST'
- Animation 2 ———— Running 'ANIMATION 2 TEST'
- Iris ———————— Running 'IRIS TEST'
- Framing Shutters – Running 'FRAMING SHUTTERS TEST'
- Edge ———————— Running 'EDGE TEST'
- Zoom ———————— Running 'ZOOM TEST'
- Prism ———————— Running 'PRISM TEST'
- Frost ———————— Running 'FROST TEST'
- Lamp ———————— Lamp Adjustment Mode Enabled
- Encoder Pan ———— XXXXXXX - Displays Pan Encoder
- Encoder Tilt ———— XXXXXXX - Displays Tilt Encoder
- Sensor
  - All Sensor Test...Pass / Fail
  - Pan Sensor...Pass / Fail
  - Tilt Sensor...Pass / Fail
  - Dimmer Sensor...Pass / Fail
  - Cyan Sensor...Pass / Fail
  - Yellow Sensor...Pass / Fail
  - Magenta Sensor...Pass / Fail
  - CTO Sensor...Pass / Fail
  - Color Whl 1 Sensor...Pass / Fail
  - Color Whl 2 Sensor...Pass / Fail
  - Gobo Whl 1 Sensor...Pass / Fail
  - Gobo 1 Index Sensor...Pass / Fail
  - Gobo Whl 2 Sensor...Pass / Fail
  - Gobo 2 Index Sensor...Pass / Fail
  - Animation Whl 1 Sensor...Pass / Fail
  - Animation 1 Index Sensor...Pass / Fail
  - Animation Whl 2 Sensor...Pass / Fail
  - Animation 2 Index Sensor...Pass / Fail
  - Prism Sensor...Pass / Fail
  - Prism Rotate Sensor...Pass / Fail
  - Prism Diverge Sensor...Pass / Fail
  - Frost Sensor...Pass / Fail
  - Frost Adjust Sensor...Pass / Fail
  - Zoom Sensor...Pass / Fail

Note: Test mode is disabled if DMX512 signal is present.

Figure 4-4: Menu Tree Part 2

Menu System Functions

Table 4-1: Menu System Chart

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Address *DMX Address*	**XXX** *DMX Address value 1 to 512*			
SetUp *Select Luminaire Type*	**Mode**	**Standard**		
		Studio		
Configure *System Configuration*	**Lamp** *Lamp Options*	**Power**	**ON** (default)	
			OFF	
		Power Up *Lamp Power-up State*	**Lamp OFF** (default) *Lamp Off*	
			Lamp ON *Lamp On*	
			Cal ON	
		Lamp Hours *Lamp Hours Used*	**XXXX** *Cumulative # of Operation Hours*	
		Reset Lamp Hours *Resets Lamp Hour Counter*	**Are you sure?** *Resets Lamp Hour Counter to 0000*	*Confirmation that reset has been executed*
	Pan/Tilt *Pan and Tilt Options*	**Movement** *Position Recovery*	**Enable**	
			Disable	
	Head Motors	**Movement**	**Enable**	
			Disable	
	Display *Display / Menu Illumination*	**Orientation**	**Auto** *Flips to enclosure position*	
			Up	
			Down	
		On Time	**Auto**	
			30 Seconds *OFF in 30 seconds*	
			5 Minutes *OFF in 5 minutes*	
			10 Minutes *OFF in 10 minutes*	
			ON *ON indefinitely*	
	Reset Defaults *Reset luminaire to default settings?*	**Are you sure?**	*Confirmation that reset has been executed*	
	Change Luminaire ID	**######** *Sets Luminaire ID Number*		

Table 4-1: Menu System Chart (Continued)

1st Level	2nd Level	3rd Level	4th Level	5thLevel
DMX *DMX Data and Pan/Tilt Mode*	**DATA** *Note: Channel and Dimmer information displayed simultaneously*	Ch 1 - Intensity XXX (Value) Ch 2 - Pan High Byte XXX (Value) Ch 3 - Pan Low Byte XXX (Value) Ch 4 - Tilt High Byte XXX (Value) Ch 5 - Tilt Low Byte XXX (Value) Ch 6 - Edge High Byte XXX (Value) Ch 7 - Edge Low Byte XXX (Value) Ch 8 - Zoom High Byte XXX (Value) Ch 9 - Zoom Low Byte XXX (Value) Ch 10 - Programming Control XXX (Value) Ch 11 - Cyan XXX (Value) Ch 12 - Yellow XXX (Value) Ch 13 - Magenta XXX (Value) Ch 14 - CTO XXX (Value) Ch 16 - Col Whl 1 XXX (Value) Ch 17 - Col Whl 1 Ctrl XXX (Value) Ch 18 - Col Whl 2 XXX (Value) Ch 19 - Col Whl 2 Ctrl XXX (Value) Ch 20 - Gobo Whl 1 XXX (Value) Ch 21 - Gobo 1 Indx High XXX (Value) Ch 22 - Gobo 1 Indx Low XXX (Value) Ch 23 - Gobo 1 Ctrl XXX (Value) Ch 24 - Gobo Whl 2 XXX (Value) Ch 25 - Gobo 2 Indx High XXX (Value) Ch 26 - Gobo 2 Indx Low XXX (Value) Ch 27 - Gobo 2 Ctrl XXX (Value) Ch 28 - Animation Whl 1 XXX (Value) Ch 29 - Animation 1 Indx High XXX (Value) Ch 30 - Animation 1 Indx Low XXX (Value) Ch 31 - Animation 1 Ctrl XXX (Value) Ch 32 - Animation Whl 2 XXX (Value) Ch 33 - Animation 2 Indx High XXX (Value) Ch 34 - Animation 2 Indx Low XXX (Value) Ch 35 - Animation 2 Ctrl XXX (Value) Ch 36 - Iris XXX (Value) Ch 37 - Frame 1A XXX (Value) Ch 38 - Frame 1B XXX (Value) Ch 39 - Frame 2A XXX (Value) Ch 40 - Frame 2B XXX (Value) Ch 41 - Frame 3A XXX (Value) Ch 42 - Frame 3B XXX (Value) Ch 43 - Frame 4A XXX (Value) Ch 44 - Frame 4B XXX (Value) Ch 45 - Frame Rotate XXX (Value) Ch 46 - Prism XXX (Value) Ch 47 - Prism Indx High XXX (Value) Ch 48 - Prism Indx Low XXX (Value) Ch 49 - Prism Divergence XXX (Value) Ch 50 - Frost XXX (Value) Ch 52 - Strobe Speed XXX (Value) Ch 53 - Strobe Ctrl XXX (Value) Ch 54 - Focus Timing XXX (Value) Ch 55 - Optic Timing XXX (Value) Ch 56 - Color Timing XXX (Value) Ch 57 - Beam Timing XXX (Value) Ch 58 - Gobo Timing XXX (Value) Ch 59 - Luminaire Ctrl XXX (Value)		
	Pan/Tilt *Pan/Tilt Options*	**Swap** Pan / Tilt *Swap Pan & Tilt operation*	**OFF** (default)	
			ON	
		Invert Pan *Inverts Pan operation*	**OFF** (default)	
			ON	
		Invert Tilt *Inverts Tilt operation*	**OFF** (default)	
			ON	

Table 4-1: Menu System Chart (Continued)

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Fixture *Displays fixture information, condition or downloads new software*	**Status** *Status/Error Display*	**Fixture OK** *. . . Or displays a list of errors encountered during calibration process or operation.*		
	ReCalibrate Fixture *Recalibrate (re-homes) all mechanical parameters of the fixture*	**Are you sure?**	*Confirmation that recalibration has been executed*	
	ReBoot Fixture *Reboots entire fixture including processor*	**Are you sure?**		
	Luminaire ID *Displays luminaire's ID number*	**######**		
	Software Version *Current software installed in fixture*	**XX/XX/XX** *Software Version Date*	**XX:XX** *Software Version Time*	
	Fixture Hours *Fixture Hours On (powered)*	**XXXXXX** *Hours*		
	Crossload Software *Download (send) fixture's software to other connected fixtures.*	**Send**	**Sending Version XX/XX/XX XX:XX** *Sending Software Version Date / Time*	**Crossload Complete**
	Download *Download Program to Luminaires*	**OK?**		
Manual *Manual Commands* *Note: Manual is Disabled if DMX512 signal is present.*	**Intensity**	**Value** *0 - 255*		
	Pan	**Value** *0 - 65535*		
	Tilt	**Value** *0 - 65535*		
	Edge	**Value** *0 - 65535*		
	Zoom	**Value** *0 - 65535*		
	Programming Control	**Value** *0 - 255*		
	Cyan	**Value** *0 - 255*		
	Yellow	**Value** *0 - 255*		
	Magenta	**Value** *0 - 255*		
	CTO	**Value** *0 - 255*		
	Color Wheel 1	**Value** *0 - 255*		
	Col Wheel 1 Control	**Value** *0 - 255*		
	Color Wheel 2	**Value** *0 - 255*		
	Col Wheel 2 Control	**Value** *0 - 255*		
	Gobo Wheel 1	**Value** *0 - 255*		
	Gobo 1 Index/Rotate	**Value** *0 - 65535*		
	Gobo 1 Control	**Value** *0 - 255*		
	Gobo Wheel 2	**Value** *0 - 255*		
	Gobo 2 Index/Rotate	**Value** *0 - 65535*		
	Gobo 2 Control	**Value** *0 - 255*		
	Animation 1	**Value** *0 - 255*		
	Animation 1 Indx/Rot	**Value** *0 - 65535*		
	Animation 1 Control	**Value** *0 - 255*		
	Animation 2	**Value** *0 - 255*		
	Animation 2 Indx/Rot	**Value** *0 - 65535*		
	Animation 2 Control	**Value** *0 - 255*		
	Iris	**Value** *0 - 255*		
	Frame 1A	**Value** *0 - 255*		
	Frame 1B	**Value** *0 - 255*		
	Frame 2A	**Value** *0 - 255*		
	Frame 2B	**Value** *0 - 255*		
	Frame 3A	**Value** *0 - 255*		
	Frame 3B	**Value** *0 - 255*		
	Frame 4A	**Value** *0 - 255*		
	Frame 4B	**Value** *0 - 255*		
	Frame Rotation	**Value** *0 - 255*		
	Prism	**Value** *0 - 255*		
	Prism Indx/Rotate	**Value** *0 - 65535*		
	Prism Divergence	**Value** *0 - 255*		
	Frost	**Value** *0 - 255*		
	Strobe Speed	**Value** *0 - 255*		
	Strobe Control	**Value** *0 - 255*		

Table 4-1: Menu System Chart (Continued)

1st Level	2nd Level	3rd Level	4th Level	5thLevel
Test* *System Test* *Note: Test is Disabled if DMX512 signal is present.*	**ALL Test** **Pan/Tilt** **Pan** **Tilt** **Dimmer** **Strobe** **Color Mixing** **Cyan** **Yellow** **Magenta** **CTO** **Color Wheel 1** **Color Wheel 2** **Gobo 1** **Gobo 2** **Animation 1** **Animation 2** **Iris** **Framing Shutters** **Edge** **Zoom** **Prism** **Frost** **Lamp** **Encoder Pan** **Encoder Tilt**	**Running** 'ALL TEST' **Running** 'PAN/TILT TEST' **Running** 'PAN TEST' **Running** 'TILT TEST' **Running** 'DIMMER TEST' **Running** 'STROBE TEST' **Running** 'COLOR MIXING TEST' **Running** 'CYAN TEST' **Running** 'YELLOW TEST' **Running** 'MAGENTA TEST' **Running** 'CTO TEST' **Running** 'COL WHL 1 TEST' **Running** 'COL WHL 2 TEST' **Running** 'GOBO 1 TEST' **Running** 'GOBO 2 TEST' **Running** 'ANIMATION 1 TEST' **Running** 'ANIMATION 2 TEST' **Running** 'IRIS TEST' **Running** 'FRAMING SHUTTERS TEST' **Running** 'EDGE TEST' **Running** 'ZOOM TEST' **Running** 'PRISM TEST' **Running** 'FROST TEST' **Lamp Adjustment Mode Enabled** **XXXXXXX** - *Displays Pan Encoder* **XXXXXXX** - *Displays Tilt Encoder*	***Press [Menu] to stop tests***	
	Sensor	**All Sensor Test** **Pan Sensor** **Tilt Sensor** **Dimmer Sensor** **Cyan Sensor** **Yellow Sensor** **Magenta Sensor** **CTO Sensor** **Color Whl 1 Sensor** **Color Whl 2 Sensor** **Gobo Whl 1 Sensor** **Gobo 1 Index Sensor** **Gobo Whl 2 Sensor** **Gobo 2 Index Sensor** **Animation Whl 1 Sensor** **Animation 1 Index Sensor** **Animation Whl 2 Sensor** **Animation 2 Index Sensor** **Prism Sensor** **Prism Rotate Sensor** **Prism Diverge Sensor** **Frost Sensor** **Frost Adjust Sensor** **Zoom Sensor**	Pass / Fail Pass / Fail	

Self Tests

Running Parameter Tests

The luminaire is capable of running self tests by using the TEST menu functions. For complete details and values for each test refer to "Diagnostic Tests" on page 68.

When running tests on multiple luminaires, a DMX termination connector is required at the last luminaire in the link. (Refer to page 16 for more information regarding the construction of this connector.).

Master luminaire containing
software version to download

Luminaire 1
requiring update

Luminaire 2
requiring update
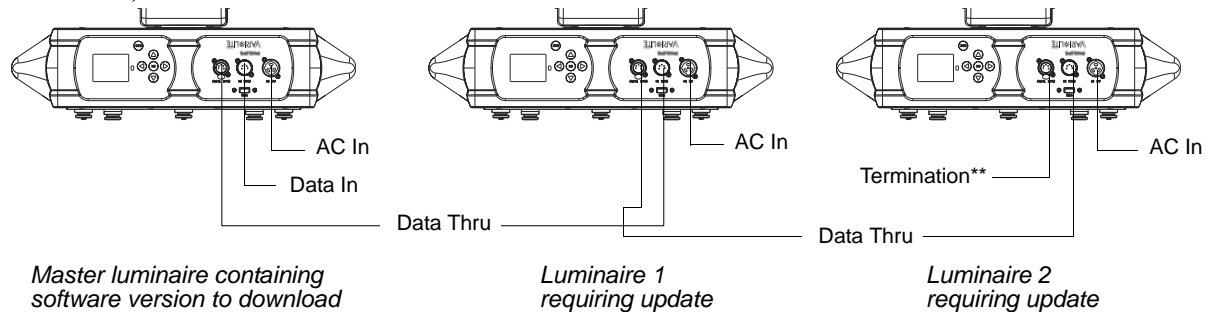
**DMX terminator required for last fixture on DMX line.

Figure 4-5: Test Setup

To run tests:

Step   1. Press [ESC].

Step   2. Press [Up] / [Down] arrows until Test appears. Press [OK].

Step   3. Use [Up] / [Down] arrows to select a parameter to test. Refer to "Menu System Functions" on page 63 for a complete list of test parameters which can be chosen.

Step   4. Press [OK] to run test.

Step   5. Press [ESC] to stop test at any time.

Note: Connected luminaires may not respond on the first action (may delay) of the master luminaire.

Movement Disable

The Movement option allows pan and tilt to be disabled so that the luminaire can be placed in any position for testing without movement occurring. In order to regain full control of the luminaire, Movement will need to be enabled after testing.

Note: When using the Movement option, pan and tilt will be disabled for all the luminaires that are linked.

To set movement option:

Step   1. Press [ESC].

Step   2. Press [Up] / [Down] arrows until Config appears. Press [OK].

Step   3. Press [Up] / [Down] arrows until Pan/Tilt appears. Press [OK].

Step   4. Movement will be displayed. Press [OK].

Step   5. Use [Up] / [Down] arrows to select Enable or Disable. Press OK] to select.

Diagnostic Tests

The following diagnostic tests are available in the test menu. Press [Menu] at anytime to stop test.

Test Descriptions

Test Name	*Display*
ALL Test	Running 'ALL TEST'
Pan/Tilt	Running 'PAN/TILT TEST'
Pan	Running 'PAN TEST'
Tilt	Running 'TILT TEST'
Dimmer	Running 'DIMMER TEST'
Strobe	Running 'STROBE TEST'
Color Mixing	Running 'COLOR MIXING TEST'
Cyan	Running 'CYAN TEST'
Yellow	Running 'YELLOW TEST'
Magenta	Running 'MAGENTA TEST'
CTO	Running 'CTO TEST'
Color Wheel 1	Running 'COL WHL 1 TEST'
Color Wheel 2	Running 'COL WHL 2 TEST'
Gobo 1	Running 'GOBO 1 TEST'
Gobo 2	Running 'GOBO 2 TEST'
Animation 1	Running 'ANIMATION 1 TEST'
Animation 2	Running 'ANIMATION 2 TEST'
Iris	Running 'IRIS TEST'
Framing Shutters	Running 'FRAMING SHUTTERS TEST'
Edge	Running 'EDGE TEST'
Zoom	Running 'ZOOM TEST'
Prism	Running 'PRISM TEST'
Frost	Running 'FROST TEST'
Lamp	Lamp Adjustment Mode Enabled
Encoder Pan	XXXXXXX - Displays Pan Encoder Value
Encoder Tilt	XXXXXXX - Displays Tilt Encoder Value

Notes

APPENDIX A.

Maintenance

This appendix provides instructions for performing routine maintenance which may be necessary during the life of the luminaire.

- **Equipment Handling**

- **Troubleshooting**

- **Routine Maintenance**

WARNING: All maintenance procedures are to be performed with power completely removed from the luminaire. Also, allow at least of five minutes cooling time before opening covers. Never remove covers or lamp cover assembly while lamp is in operation.

Equipment Handling

Below are some basic tips and information on handling luminaires and their associated components.

Locations/Use

VARI∗LITE luminaires are designed for dry locations only. Exposure to rain or moisture (including, but not limited to, fog machines, misters, etc.,) may damage luminaire.

Lamps

Servicing

*   When handling a lamp, hold it by the ceramic base while wearing cotton gloves or finger cots. Do not touch the glass envelope (bulb). If you touch the glass with bare fingers, immediately wipe off any fingerprints with isopropyl alcohol.

*   Use care when removing and replacing covers of luminaire and cleaning reflectors. Any jarring can undo the optical alignment of the lamp.

*   Hot Lamp. Luminaire must remain powered on for 5 minutes after dousing lamp. Do not open for 5 minutes after switching off. Lampe chaude. Le luminaire doit rester en marche pendant 5 minutes après avoir éteindre la lampe. Ne pas ouvrir pendant 5 minutes après la coupure.

*   Risk of exposure to excessive ultraviolet radiation. Do not operate without complete lamp enclosure in place or when lens is damaged. Risque d'exposition aux rayonnements ultraviolets excessifs. Ne pas faire fonctionner sans le boîtier complet de lampe mis en place ou lorsque l'objectif est endommagé.

Heat

When lamps are lit, the interior of the luminaires becomes very hot. To aid in the airflow circulation within the luminaires, after dousing the lamps, wait 5 minutes before removing power to the luminaires. This will provide enough time for the equipment fan to cool off the unit. Users should wait until the unit is cool to the touch before servicing or handling.

Lamp Life

*   When operating arc lamps, allow luminaires to operate for at least 3 minutes. It takes about 3 minutes for the fill components (mercury and halogen-metal compounds) in the lamp tubes to vaporize completely. If the lamps are switched off earlier than 3 minutes, the fill components are partially vaporized. The inadequately vaporized fill components and the electrode material (tungsten) are deposited in the areas of the lamp tubes that have remained cool. As a result, the lamp tubes blacken prematurely and reduce the service life of the lamps.

*   If the luminaire will be dimmed out for more than two hours, the lamp should be doused.

Solid State Electronics

Electrostatic Discharge (ESD)

Electrostatic discharge (ESD) presents a significant danger to solid state electronic components (semiconductor devices and PC board assemblies). Static electricity can build on a variety of common objects (including people) simply by handling or moving. ESD rarely results in immediate failure of a component, but shows up later as an intermittent problem or severely reduces the life of the component. All VARI✳LITE equipment uses solid state electronics and appropriate precautions to protect them should be observed when servicing.

Printed Circuit Boards (PCBs)

All PC boards should be shipped in electrostatic shielding bags. When handling PC boards or components, devices such as conductive mats and conductive wrist straps should be used whenever possible. If these precautionary devices are not available, handling of PC boards and components should be avoided.

CAUTION: Black foam (used to package solid state electronics) should never be used for packing batteries or put in contact with PC boards which contain batteries.

Troubleshooting

Error Messages

If a problem occurs during luminaire calibration, at the end of the calibration sequence the Menu Display will cycle through any applicable error message(s), one at a time until the end of the list is reached. To review the error messages again, it will be necessary to access them using the Status function.

To access error messages:

Step   1.   Press [ESC].

Step   2.   Press [Up] / [Down] arrows until Fixture appears. Press [OK].

Step   3.   Press [Up]/ [Down] arrows to access Status. Press [OK]. (Display will now scroll through any error messages or display OK if no errors).

Table A-1: Error Messages

Display	Meaning
OK	No Errors Found - All Sensors Responded Properly
Pan Sensor	Pan Sensor (Encoder) Error
Tilt Sensor	Tilt Sensor (Encoder) Error
Dimmer Sensor	Dimmer Sensor Error
Cyan Sensor	Cyan Color Sensor Error
Yellow Sensor	Yellow Color Sensor Error
Magenta Sensor	Magenta Color Sensor Error
CTO Sensor	CTO Sensor Error
Color Whl1 Sensor	Color Wheel 1 Sensor Error
Color Whl2 Sensor	Color Wheel 2 Sensor Error
Gobo Whl1 Sensor	Rotating Gobo Wheel 1 Sensor Error
Gobo 1 Index Sensor	Rotating Gobo Wheel 1 Indexing Sensor Error
Gobo Whl2 Sensor	Rotating Gobo Wheel 2 Sensor Error
Gobo 2 Index Sensor	Rotating Gobo Wheel 2 Indexing Sensor Error
Animation Whl1 Sensor	Animation Wheel 1 Sensor Error
Animation 1 Index Sensor	Animation Wheel 1 Indexing Sensor Error
Animation Whl2 Sensor	Animation Wheel 2 Sensor Error
Animation 2 Index Sensor	Animation Wheel 2 Indexing Sensor Error
Prism Sensor	Prism Mechanism Sensor Error
Prism Rotate Sensor	Prism Rotating Sensor Error
Prism Diverge Sensor	Prism Diverge Sensor Error
Frost Sensor	Frost Mechanism Sensor Error
Frost Adjust Sensor	Frost Adjustment Sensor Error
Zoom Sensor	Zoom Assembly Sensor Error

Troubleshooting Guide

If a problem is suspected, first try recalibrating the luminaire to prompt an error message. The chart below provides possible causes and remedies for various error messages and/or symptoms.

⚠ **CAUTION:** Some troubleshooting is included for reference only. Performing remedies may void product warranty. Refer to the Vari-Lite Limited Warranty card included with the product.

Table A-2: Troubleshooting Guide

Message	Symptom	Description	Possible Cause/Remedy
Lamp Power Douse	Lamp does not strike upon start-up	Lamp Off option is configured	- Reconfigure lamp startup option in Lamp config menu.

n/a	Lamp douses frequently	Lamp Douse	Fan failure...
			  - check head and enclosure fans for proper operation.
			Ballast overheating...
			  - operating within the specified ambient temperature?
			  - check enclosure vents for debris / dirt.
			  - check fan settings in menu.
			  - check enclosure fans for proper operation.
			NOTE: Upon initial power up, ballast fans will run for a few seconds and then operate as needed. Enclosure vents must be clear of debris and dirt to allow proper airflow.

n/a	Lamp will not strike	Lamp Strike Failure	Lamp cutout switch disengaged...
			  - check lamp cutout switches at lamp box and fan ducts.
			Bad lamp...
			  - replace lamp.
			Low input voltage...
			  - check input power (must be 200 to 240 VAC).

n/a	Luminaire behaves oddly	DMX Map Not Matched	Console library not set correctly... - check console library matches DMX map of luminaire.

n/a	Luminaire does not power up	No power	Circuit not energized...
			  - verify circuit breaker (at source) is turned on.
			Not plugged in...
			  - ensure A/C cable is connected to power source.

n/a	Self tests will not run or software download does not work from luminaire.	DMX Data Input	Detecting DMX data... - disconnect DMX input cable.
n/a	No response to DMX data	DMX Failure	DMX connector disconnected... - check DMX DATA IN connection.

n/a	Erratic control of luminaire	DMX Termination	No DMX termination or termination not correct...
			  - check for DMX terminator.
			  - Luminaire DMX address does not match console patch.

Routine Maintenance

Lamp Removal and Installation

⚡ **WARNING:** Disconnect fixture before relamping. Déconnectez le projecteur avant que le changement de lampe.

⚠ **CAUTIONS & WARNINGS**

- Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use isopropyl alcohol and cotton cloth to thoroughly clean glass portion of lamp.

- Hot Lamp. Luminaire must remain powered on for 5 minutes after dousing lamp. Do not open for 5 minutes after switching off. Lampe chaude. Le luminaire doit rester en marche pendant 5 minutes après avoir éteindre la lampe. Ne pas ouvrir pendant 5 minutes après la coupure.

- Risk of exposure to excessive ultraviolet radiation. Do not operate without complete lamp enclosure in place or when lens is damaged. Risque d'exposition aux rayonnements ultraviolets excessifs. Ne pas faire fonctionner sans le boîtier complet de lampe mis en place ou lorsque l'objectif est endommagé.

To replace lamp:

Step 1. Ensure power is completely removed from luminaire.

Step 2. Set the luminaire head horizontally.

Step 3. Engage tilt lock to secure luminaire head in position.

Step 4. At back of luminaire, using #2 Phillips screwdriver, remove lamp socket cover by loosening the two quarter-turn captive screws. Note: lamp socket cover is connected with a safety tether.

Lamp Socket

Lamp

Lamp Socket Cover

Quarter-Turn Screws
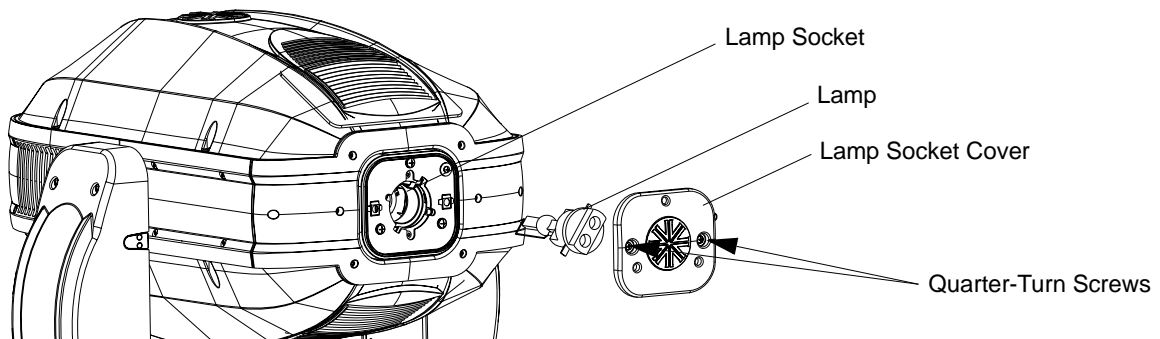
Figure A-1: Lamp Socket Cover Removal

Step 5. To remove lamp, grasp lamp base by hand, twist lamp counter-clockwise until lamp's tabs align with slots in lamp socket (see Figure A-2 on page 77 for more information), and remove lamp by pulling it straight out of socket.

Step   6. Remove replacement lamp from shipping box.

Step   7. As shown in Figure A-2, align replacement lamp tabs with lamp socket.

Align tabs of lamp with socket when installing

Lamp*

NOTE: * "Bow" of lamp must be oriented with "Slot" in reflector.

Bow

Lamp Socket Cover
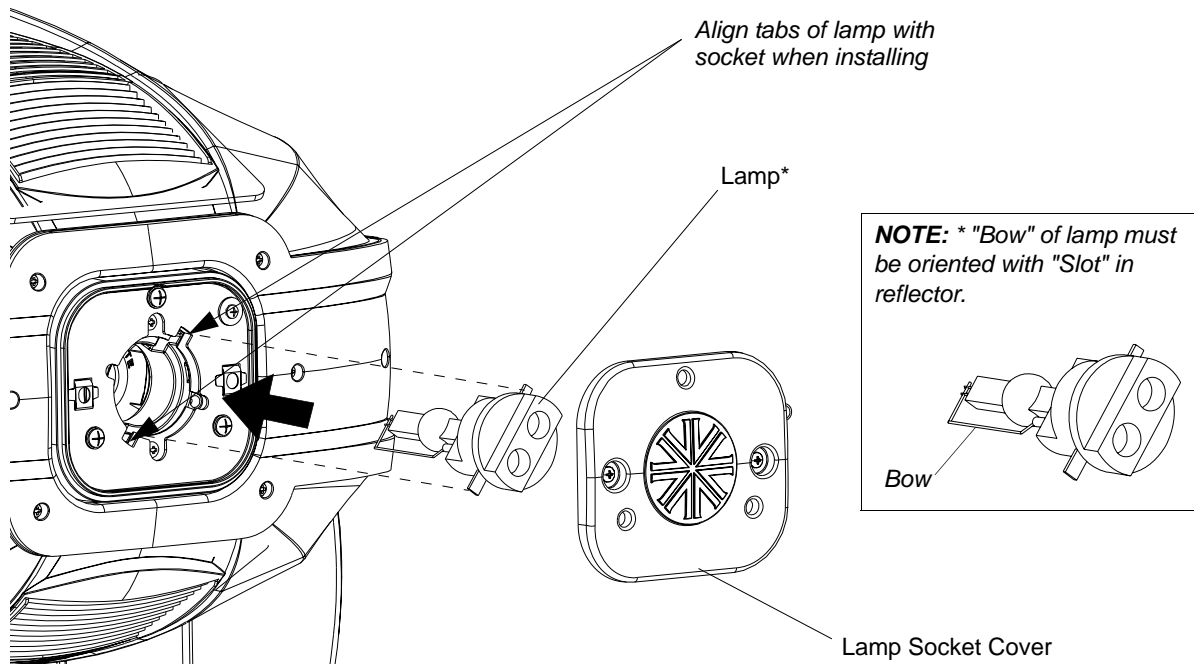
Figure A-2: Lamp Installation

Step   8. Install lamp fully into lamp socket, taking care not to touch lamp glass.

Step   9. Turn lamp clockwise to seat lamp into socket. Lamp base should be aligned as illustrated in Figure A-3.

Lamp

Note alignment of fully seated lamp

Ensure lamp is completely seated before reinstalling lamp socket cover.
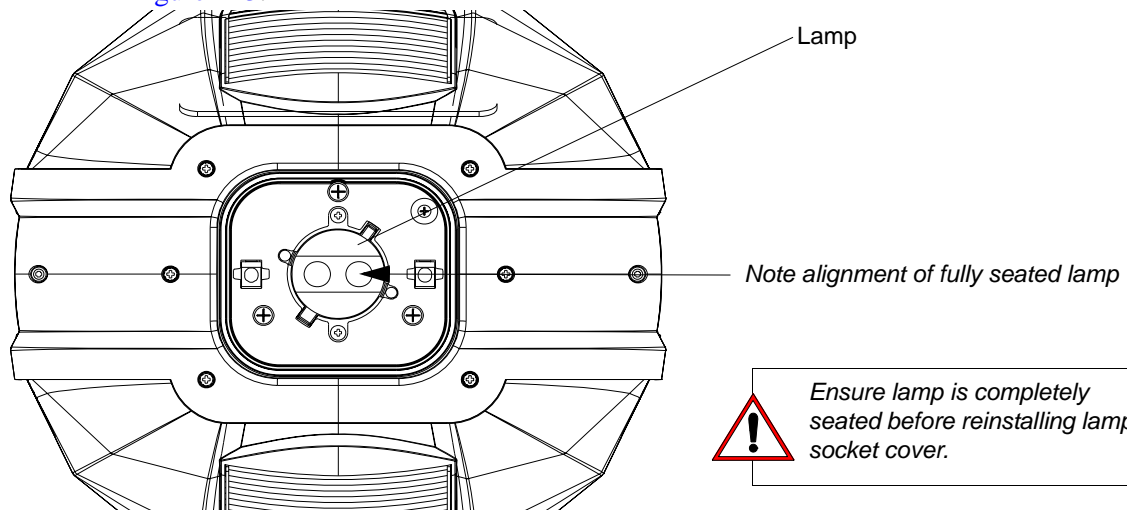
Figure A-3: Installed Lamp

Step 10. Reinstall lamp socket cover. Make sure safety tether is completely encapsulated within lamp socket cover.

Step 11. Disengage tilt lock to allow luminaire head to move freely.

Step 12. Align lamp as described in "Align Lamp For Maximum Beam Irradiance" on page 19.

Fixed Color Wheel Filter Removal and Installation

To remove and replace fixed color filters:

Step   1. Before removing power from luminaire, move Edge towards front of luminaire with control console or via luminaire menu system.

WARNING: Remove power from luminaire and allow luminaire to cool completely before performing this procedure.

Step   2. Remove power from luminaire and allow luminaire to cool completely.

Step   3. Depending on which color filter wheel you need to access, do the following:

   a. For Fixed Color Wheel 1 (closest to the rear of luminaire), remove head cover assembly as indicated in Figure A-4 by loosening four captive screws and lifting cover away from luminaire head. Note, head cover is attached by a safety tether.

   b. For Fixed Color Wheel 2 (closest to the front of luminaire), remove head cover assembly as indicated in Figure A-4 by loosening our captive screws and lifting cover away from luminaire head. Note, head cover is attached by a safety tether.
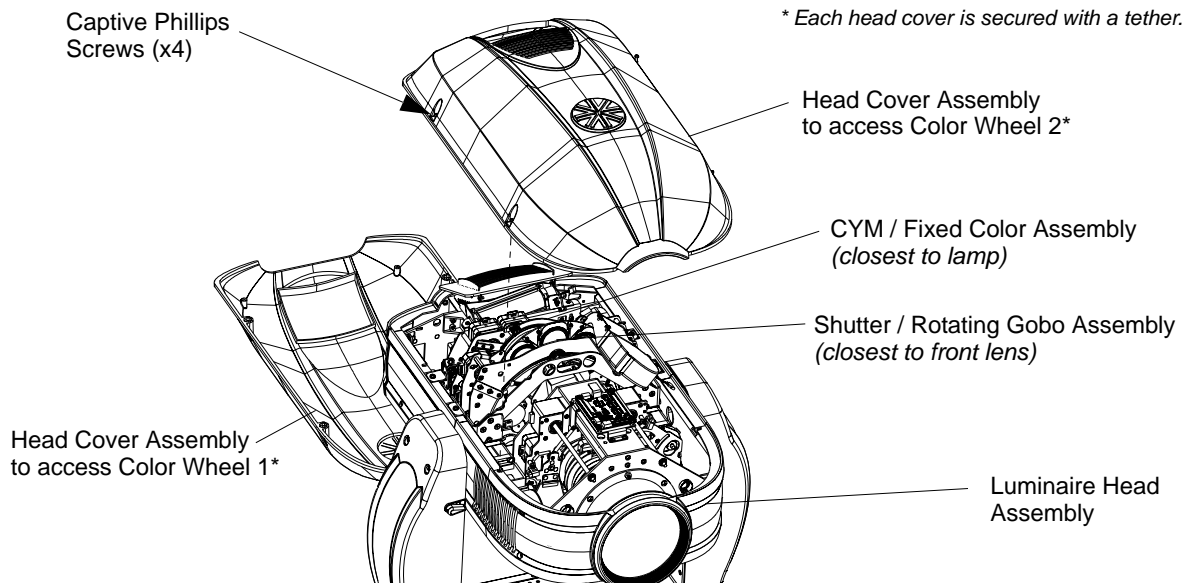
Figure A-4: Replacing Fixed Color Filters

CAUTION: Wear protective gloves or other protective covering while handling filters to avoid leaving fingerprints. Filters are extremely fragile and can break if not handled carefully. If dirty, clean with isopropyl alcohol and a soft, lint-free cloth.

Note: For standard fixed color filters, refer to "Fixed Color Wheel 1" on page 28 or "Fixed Color Wheel 2" on page 29

Step 4. At fixed color wheel, slowly rotate wheel by hand until filter to be removed is visible on assembly as shown in Figure A-5.

Step 5. At filter to be removed, (1) press filter out of fixed color wheel with fingers and (2) guide filter up and away from fixed color wheel.

2 *Pull filter straight up and away from wheel assembly*

Fixed Color Filter

1 *Push filter from front of wheel to dislodge it from wheel assembly*
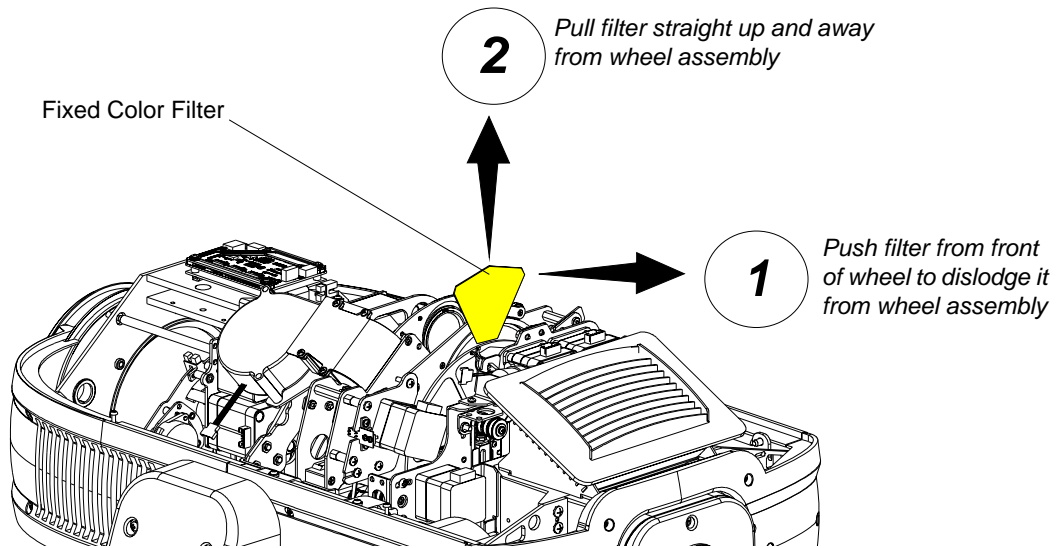
Figure A-5: Removing Fixed Color Filters

Step 6. Install replacement filter into slot. Note orientation of fixed color filter as indicated in Figure A-6. Make sure filter is inserted and secured by fixed color wheel retaining clip as shown in Figure A-6.

Fixed Color Filter

Fixed Color Filter Orientation

Fixed Color Filter

VERY IMPORTANT!

Rear of filter is the REFLECTIVE side and MUST be towards lamp.

Fixed Color Filter Retaining Clip

Fixed Color Wheel Assembly

Note: Assembly shown for clarity.

Open Position (no filter)
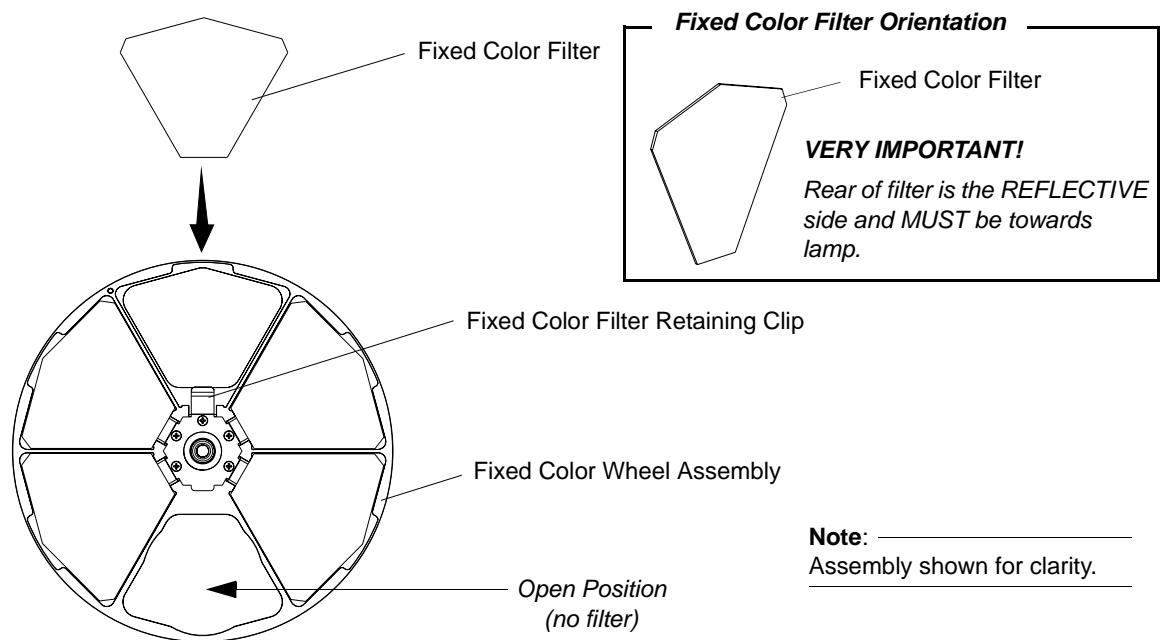
Figure A-6: Installing Fixed Color Filters

Step 7. After filter is installed, reinstall head cover(s).

Rotating Gobo Removal and Installation

⚠ **CAUTION:** VL4000 spot luminaires accept glass gobos only. Use of metal gobos in these luminaires may damage gobo assembly and will void the luminaire warranty.

To remove and replace rotating gobos:

Step 1. Before removing power from luminaire, move Edge towards front of luminaire with control console or via luminaire menu system.

⚠ **WARNING:** Remove power from luminaire and allow luminaire to cool completely before performing this procedure.

Step 2. Remove power from luminaire and allow luminaire to cool completely.

Step 3. Depending on which rotating gobo wheel you need to access, do the following:

    a. For Rotating Gobo Wheel 1 (closest to the rear of luminaire), remove head cover assembly as indicated in Figure A-4 by loosening our captive screws and lifting cover away from luminaire head. Note, head cover is attached by a safety tether.

    b. For Rotating Gobo Wheel 2 (closest to the front of luminaire), remove head cover assembly as indicated in Figure A-4 by loosening our captive screws and lifting cover away from luminaire head. Note, head cover is attached by a safety tether.
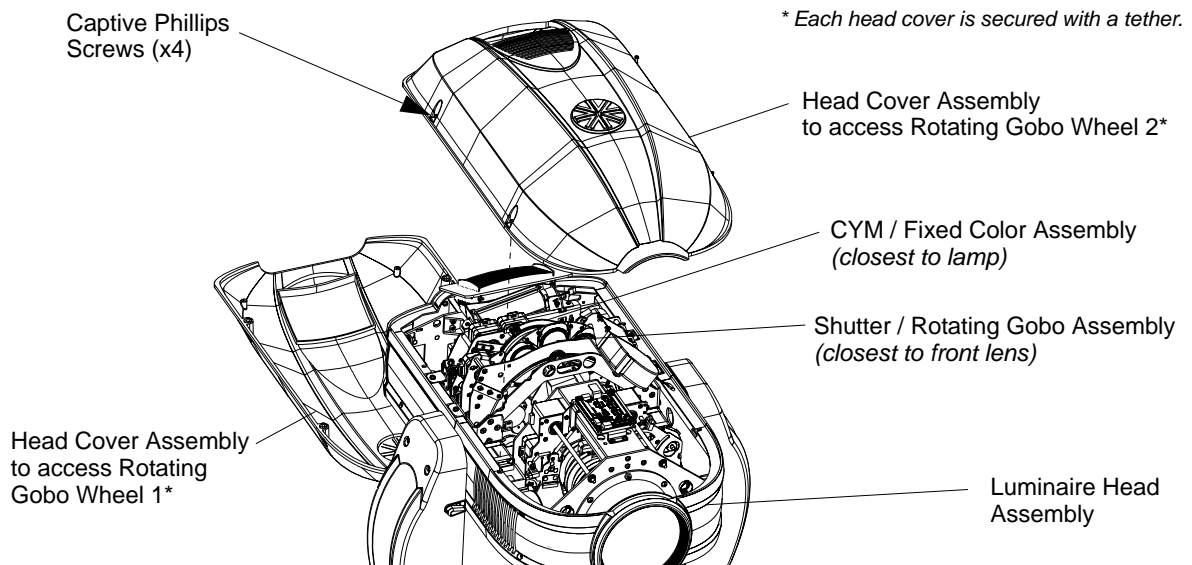
Figure A-7: Replacing Rotating Gobos

⚠ **CAUTION:** Wear protective gloves or other protective covering while handling gobos to avoid leaving fingerprints. If dirty, clean with isopropyl alcohol and a soft, lint-free cloth.

Note: For the standard load of rotating gobos, refer to "Rotating Gobo Wheel 1" on page 30 or "Rotating Gobo Wheel 2" on page 31

Step 4. At rotating gobo wheel, slowly rotate wheel by hand until gobo to be removed is visible on assembly.

Step 5. Grip gobo assembly and pull up to remove from luminaire head.

Step 6. *Before installing gobo assembly into rotating gobo wheel assembly*, make note of relationship between carrier and main gear slot as illustrated in Figure A-8.

    a. Align gobo assembly gear timing marks *WITH*...

    b. Slot in main gear on gobo wheel assembly. You may have to rotating gear by hand for alignment.

Rotating Gobo Assembly

Rotating Gobo Wheel Assembly

(a) Align gobo assembly timing marks with...

(b) Slot in main gear in gobo wheel assembly
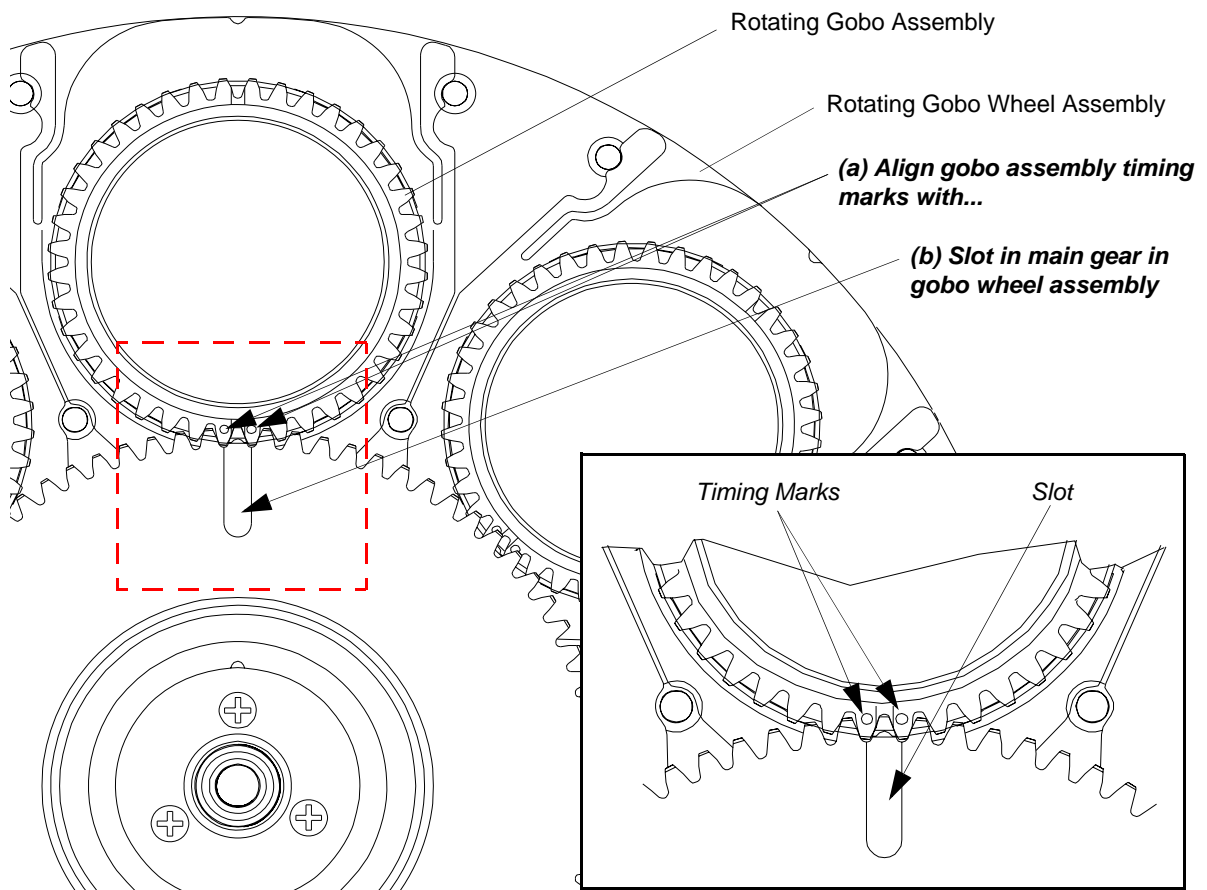
Timing Marks   Slot

Figure A-8: Rotating Gobo Wheel - Gobo Clocking

- Continued Next Page -

Rotating Gobo Assembly
(gear side towards front of luminaire)

Retaining Tabs
(Retaining clips need to be seated in pins but are not used to aid in removal)

⚠ **CAUTION:** Do not touch glass with bare fingers. Handle by gobo carrier only.

Front of Assembly Shown
(side towards front lens)

Rotating Gobo Wheel Assembly

Open Position
(no gobo)

Note:
Assembly shown for clarity.

Rotating Gobo Assembly Orientation

Rotating Gobo Assembly

VERY IMPORTANT!

Side shown (to right) is non-reflective side. The non-reflective side must face the front lens.

Rear of gobo is the REFLECTIVE side and MUST be towards lamp.

⚠ *VL4000 spot luminaires accept glass gobos only. Use of metal gobos in these luminaires may damage gobo assembly and will void the luminaire warranty.*

Figure A-9: Rotating Gobo Wheel - Gobo Installation

Step   7.   After ensuring main gear slot and gobo assembly timing marks are properly aligned (as described in Step 7, install replacement rotating gobo assembly into gobo position. Note orientation of rotating gobo assembly as indicated in Figure A-9.

Step   8.   After rotating gobo assembly is installed, reinstall head cover(s).

Animation Wheels Removal and Installation

To remove and replace animation wheels:

Step 1. Before removing power from luminaire, move Edge towards front of luminaire with control console or via luminaire menu system.

⚡ **WARNING:** Remove power from luminaire and allow luminaire to cool completely before performing this procedure.

Step 2. Remove power from luminaire and allow luminaire to cool completely.

Step 3. Depending on which animation wheel you need to access, do the following:

   a. For Animation Wheel 1 (closest to the rear of luminaire), remove head cover assembly as indicated in Figure A-10 by loosening four captive screws and lifting cover away from luminaire head. Note, head cover is attached by a safety tether.

   b. For Animation Wheel 2 (closest to the front of luminaire), remove head cover assembly as indicated in Figure A-10 by loosening four captive screws and lifting cover away from luminaire head. Note, head cover is attached by a safety tether.
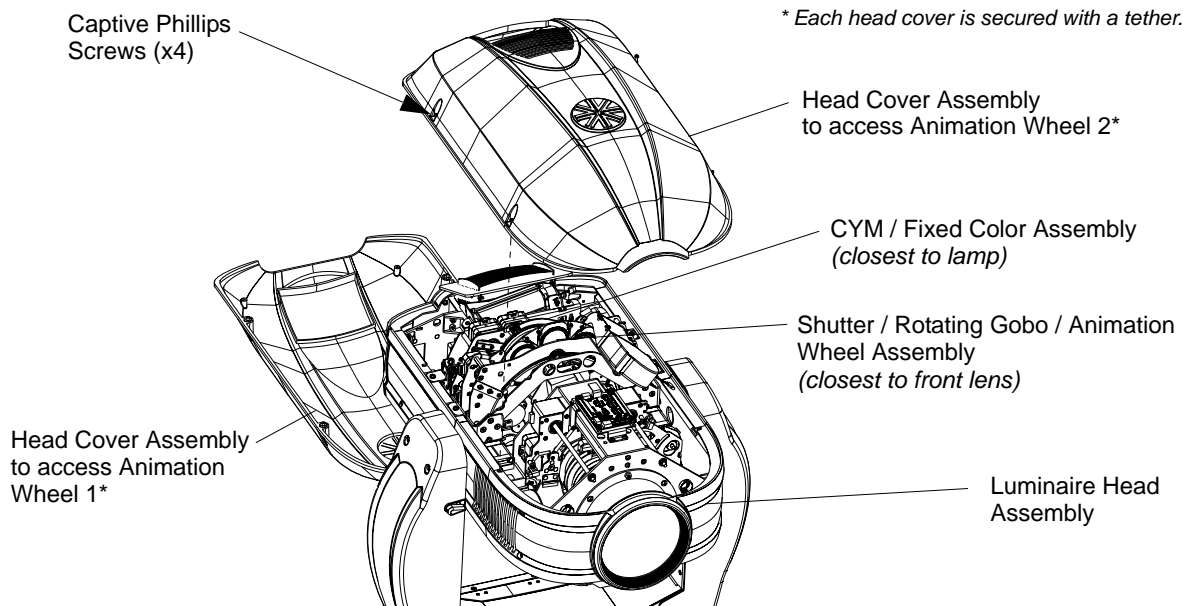
Figure A-10: Replacing Animation Wheels

⚠ **CAUTION:** Wear protective gloves or other protective covering while handling animation wheels to avoid leaving fingerprints. If dirty, clean with isopropyl alcohol and a soft, lint-free cloth.

Note: For the standard load of animation wheels, refer to "Animation Wheel 1 - Dichro*Fusion" on page 32 or "DMX Operation" on page 33.

Step   4. Loosen screw on bulkhead so animation arm can swing out
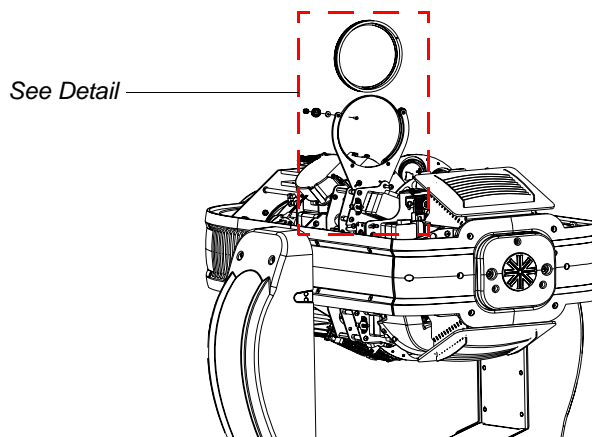
Step   5. Remove one screw from animation frame.

CAUTION: Be careful not to lose belt bearing, washer, screw or post. These will be required for reassembly and installation.
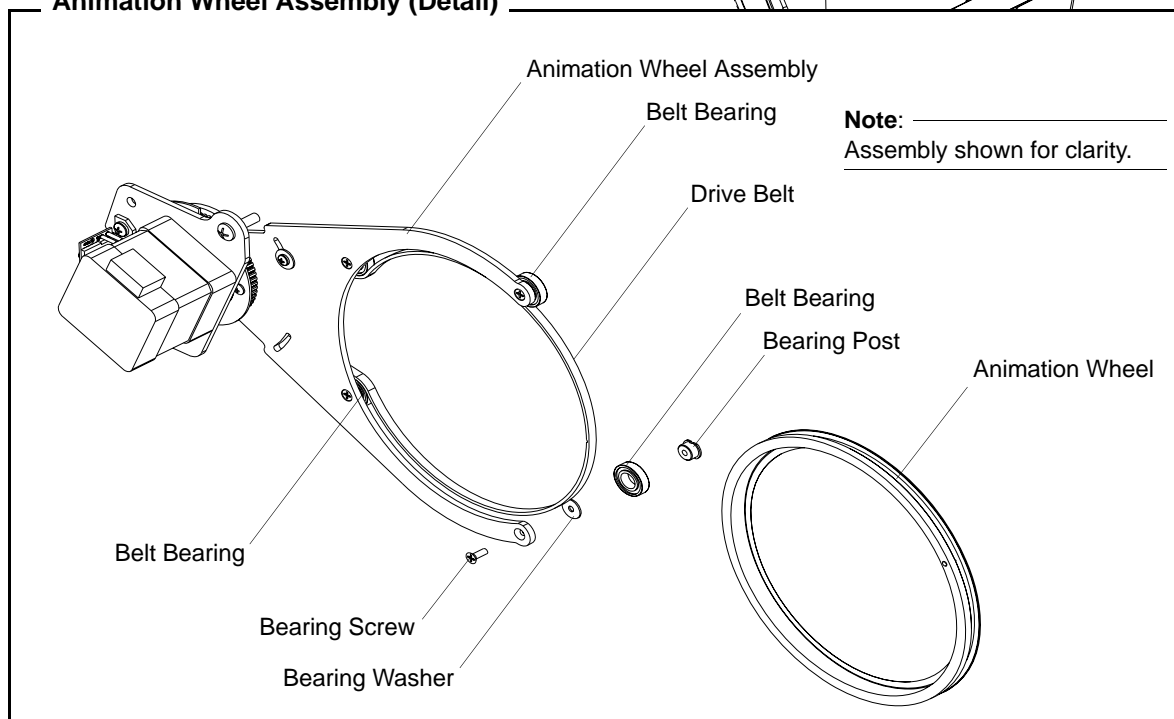
Step   6. Slip belt off of animation wheel. Remove wheel.

See Detail

Note:
Animation wheel 2 shown.
Information same for both wheels.

Animation Wheel Assembly (Detail)

Animation Wheel Assembly

Belt Bearing

Note:
Assembly shown for clarity.

Drive Belt

Belt Bearing

Bearing Post

Animation Wheel

Belt Bearing

Bearing Screw

Bearing Washer

Figure A-11: Animation Wheel Removal & Installation

Step   7. Slip belt around new wheel. Seat on all three bearings.

Step   8. Reassemble post onto bearing and washer. Hand tighten down with screw.

Step   9. Swing animation arm back into beam area and hand tighten down bulkhead screw.

Step 10. After animation wheel is installed, reinstall head cover(s).

Cleaning Optical Lenses and Filters

WARNING: Remove power from luminaire before performing maintenance.

WARNING: Acetone is a harsh cleaning agent and solvent. Acetone is very flammable. Please handle acetone according to manufacturer's safety instructions and precautions.

The front lens, optics/color filters, and reflector may require cleaning after extended use.

* FRONT LENS: Use a isopropyl alcohol with a soft, lint-free cloth to clean the front lens.
* OPTICS/COLOR FILTERS/ GOBOS/ANIMATION WHEELS: Use Acetone or Isopropyl Alcohol along with a soft, lint-free cloth to clean the optics/color filters.
* REFLECTOR: Use Acetone or Isopropyl Alcohol along with a soft, lint-free cloth to clean the reflector.

CAUTION: Do not continuously rub color filters or reflector - it may damage or remove the optical coating.

Notes

APPENDIX B.

Technical Specifications

> **Note:** Philips Vari-Lite reserves the right to change details of design, materials and finishes. Specifications are subject to change without notice. Some features may be the result of future software updates. Philips VARI✳LITE automated lighting equipment is made in the U.S.A.

Mechanical

CYM Color Mixing System

A three filter CYM cross fading system capable of extremely smooth movements at both slow and fast speeds, and a variable CTO color temperature correction system.

Fixed Color Wheels

Two opposing fixed color wheels each with five interchangeable color filters are capable of producing multi-color effects and variable wheel rotations.

Rotating Gobo Wheels

Two gobo wheels combine to each offer seven rotatable, indexable gobo positions and one open position.

> **Note:** VL4000 spot luminaires accept glass gobos only. Use of metal gobos in these luminaires may damage gobo assembly and will void the luminaire warranty.

Animation Wheels

Two animation wheels each offer unique rotatable, indexable patterns with variable motion control from horizontal to vertical. Unique Dichro*Fusion pattern is chromatically tuned to provide endless color effects

Zoom Optics

A 12-element 5:1 zoom optics system, covering a range from 9° to 47°.

Beam Size Control

A mechanical iris provides continuous beam size control for rapid and smooth timed beam angle changes.

Edge and Pattern Focus

Variable beam focus to soften edges of gobos or spot. Remarkable depth of field capability allows morphing effects between gobo and animation wheels.

Shutter Control

A four-blade shutter mechanism that allows the blades to be operated independently or in unison on two planes for a clear and crisp image. The entire mechanism can rotate 50º in either direction.

Rotating Prism

Independent rotating and indexing 3-facet prism with variable deviation control.

Variable Frost

Independent variable frost glass with adjustable softness control.

Intensity Control

Full field dimming designed for smooth timed fades as well as quick dimming effects.

Strobe

High-performance dual blade strobe system capable of ultra-fast operation.

Pan/Tilt

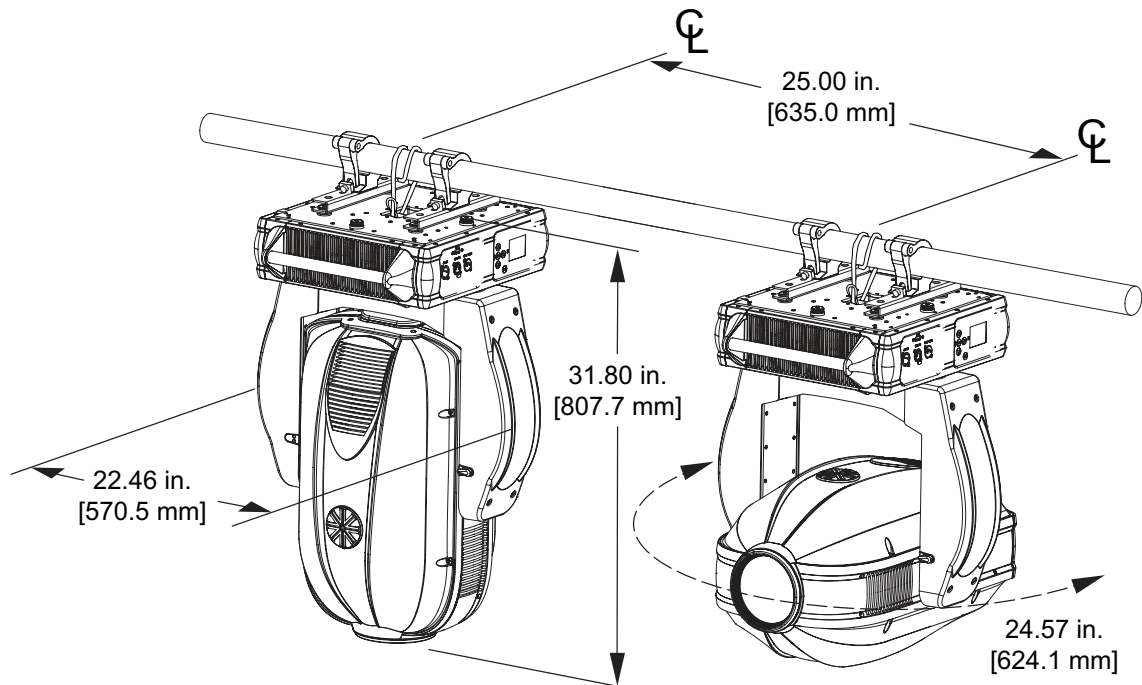Smooth, time-controlled continuous motion by way of a high-power, three-phase stepper motor system.

- Range: Pan - 540° , Tilt - 270°.
- Pan/Tilt Accuracy: 0.3° resolution.

Weight

83 lbs. (37.7 kg) - Luminaire only, no accessories.

Spacing

The VL4000 spot luminaire hangs on 25 inch (635 mm) centers.

Figure B-1: Luminaire Hanging & Spacing Requirements

Optical

Source

1200W Philips MSR Gold FastFit lamp (rated for 800-1400W operation) running at 1400W in Standard mode or 1200W in Studio mode.

Reflector

Precision facetted, elliptical glass reflector system with dichroic cold mirror coating.

Color Temperature

6000K

Fixture Output

Standard Mode: 33,000 lumens

Studio Mode: 25,000 lumens

Zoom Optics / Control

- Features a high-speed, precision 12-element, 5:1 zoom optical system with continuously variable field angle from approximately 9° to 47°; programmable over a timed range of 0.5 seconds to 20 minutes.
- Variable beam focus to soften edges of gobos or spot.

Intensity Control

Full field dimming designed for smooth timed fades as well as quick dimming effects.It also features a high-performance dual blade strobe system capable of ultra-fast operation.

Operational

Power Requirements

Standard AC power distribution from 200 - 240VAC, 50/60 Hz. The unit requires up to 11.0A depending on the AC supply voltage.*

Note: *For a breakdown of total luminaire current draw at different voltages, see "Current vs. Voltage" on page 14.

Operational Temperature

Standard Mode: -20° to 104°F (-29° to 40°C)

Studio Mode: -20° to 122°F (-29° to 50°C)

Cooling

Forced-air cooling.

Control

Control by DMX512 protocol. Compatible with a wide variety of DMX512 consoles.

DMX Channels

57 Channels (Enhanced 16-Bit Mode) / 52 Channels (16-Bit Mode)

RDM Control

Completely compatible with a wide variety of RDM devices.

Menu System

Full color LCD with battery powered control.

Mounting Position

The luminaire can be mounted and operated in any orientation. For spacing requirements, refer to Figure B-1 on page 88.

Notes

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